WM-GX612/GX614

SERVICE MANUAL

AEP Model
UK Model
E Model
Australian Model

SONY
RECORDING
WALKMAN

Photo : WM-GX614

Model Name Using Similar Mechanism	NEW
Tape Transport Mechanism Type	MF-WMGX614-112

SPECIFICATIONS

Radio section

Frequency range (For "Eur" indication)
FM: 87.5–108 MHz
AM: 531–1,602 kHz

Tape section

Frequency response (Dolby* NR off)
Playback: 20–18,000 Hz
Recording/playback: 100–10,000 Hz

Output
Headphones (∩ REMOTE jack)
Load impedance 8–300 ohms

Power output
5 mW + 5 mW (16 ohms)

* Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation. "DOLBY" and the double-D symbol DD are trademarks of Dolby Laboratories Licensing Corporation.

General

Power requirements
1.5 V
Rechargeable battery
One R6 (size AA) battery

Dimensions (w/h/d)
Approx. 108.9 × 79.5 × 26.1 mm, incl. projecting parts and controls

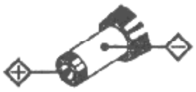
Mass
Approx. 145 g
GX614: Approx. 230 g incl. rechargeable battery, headphones with remote control and cassette
GX612: Approx. 225 g incl. rechargeable battery, headphones with remote control and cassette

Supplied accessories
Battery case (1)
Stereo headphones with remote control (1)
Clip (1)
Battery charger (1)
AC plug adaptor (1) (excluding Australian and Korean models)
Rechargeable battery (NC-6WM, 1.2 V, 600 mAh, Ni-Cd) (1)
Carrying pouch (1)
Stereo microphone (1)
Microphone stand (1)

Design and specifications are subject to change without notice.

House Current (mains) (excluding Korean model)

Remove the rechargeable battery if inserted and attach the battery case. Connect the AC power adaptor (AC-E15HG not supplied) to the DC IN 1.5 V of the battery case and to the mains. Do not use any other AC power adaptor.



— Continued on next page —

RADIO CASSETTE CORDER

SONY®

MICROFILM

Dry Battery

Battery life (Approx. hours)

	Sony alkaline LR6 (SG)	Sony R6P (SR)
Tape playback	15	3.5
Radio reception	22	6.5
MIC recording	7.5	2
Radio recording	6	1.5

For maximum performance we recommend that you use an alkaline battery.

Notes

- Do not charge a dry battery.
- When you do not use the Walkman for a long time, remove the battery to avoid any damage caused by battery leakage and subsequent corrosion.

Rechargeable Battery

1. Insert the rechargeable battery (NC-6WM) into the charger with correct polarity.

2. Plug in the charger to the mains.
   Australian model: Full charging takes about 3.5 hours.
   Korean model: The full charging time depends on the voltage of your mains.
   110 V: 10 hours
   220 V: 2.5 hours

   Other models: The full charging time depends on the voltage of your mains.
   120 V: 10 hours
   220–240 V: 2.5 hours
   If the plug does not fit your mains, attach the supplied AC plug adaptor.

3. Insert the fully charged battery into the rechargeable battery compartment

When to charge the battery

Charge the battery when the BATT lamp dims. You can charge the battery about 300 times.

Battery life (Approx. hours)

Rechargeable battery (NC-6WM)	
Tape playback	5 20 (with Sony alkaline LR6 (SG))
Radio reception	7.5 28 (with Sony alkaline LR6 (SG))
MIC recording	3 10.5 (with Sony alkaline LR6 (SG))
Radio recording	2.5 8.5 (with Sony alkaline LR6 (SG))

Notes

- Do not tear off the film on the rechargeable battery.
- Use the Sony NC-6WM rechargeable battery only with the supplied battery charger or with the separately sold battery charger for Sony NC-6WM.
- Do not leave the charger plugged in for more than 20 hours. Overcharging may damage the rechargeable battery.
- The battery charger and the rechargeable battery may become warm during charging, but it is not a problem.

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Notes on chip component replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

Flexible Circuit Board Repairing

- Keep the temperature of the soldering iron around 270 °C during repairing.
- Do not touch the soldering iron on the same conductor ofthe circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

SECTION 1
SERVICE NOTE

[Service Mode]

Mode which enables the mechanism to be operated with the MAIN board opened.

Photo sensor PH701 mounted on the MAIN board is used to detect rotaion of the reels. Because it is mounted on the MAIN board, when the MAIN board is being removed, rotation of the reels cannot be detected and the auto-off/tape-end detector circuit does not operate correctly.

F/R switch (S701) is also mounted on the MAIN board. Therefore, without the MAIN board, the head cannnot be placed in playback position, and power cannot be supplied to the circuitry of the playback system.

When the MAIN board is being removed, follow the procedures below, in order to check operation of the mechanisms of the tape deck and to check voltages supplied to each circuit.

1. Setting
1) Refer to "Disassembly" and remove the cabinet and open the MAIN board.
2) Connect the MAIN board to the motor and plunger using a jumper wire. Use "Extension tool (1-769-143-11)) (one set 10 tools)" to make connection simple.
3) Short-circuit the service mode land (BP2) by soldering.
4) Apply a square wave signal to TP20. (See the figure on the right.)
5) Supply 1.5V to the battery terminals (+) and (–) using a DC power supply.

2. Preset State
This state must be set to set the PLAY, FF, and REW modes.
1) Check that the lever (FR SW) is at the center and F/R switch (S701) is at the center. If not, set the preset state as follows.
2) Move the F/R switch (S701) according to the side faced by the lever (FR SW).
3) Turn OFF the DC power supply switch once and then turn it ON again so that the lever (FR SW) can be moved. Move the F/R switch (S701) according to this timing and set to the center.

3. FF REW Mode
1) Set the preset state and press the FF switch and REW switch.

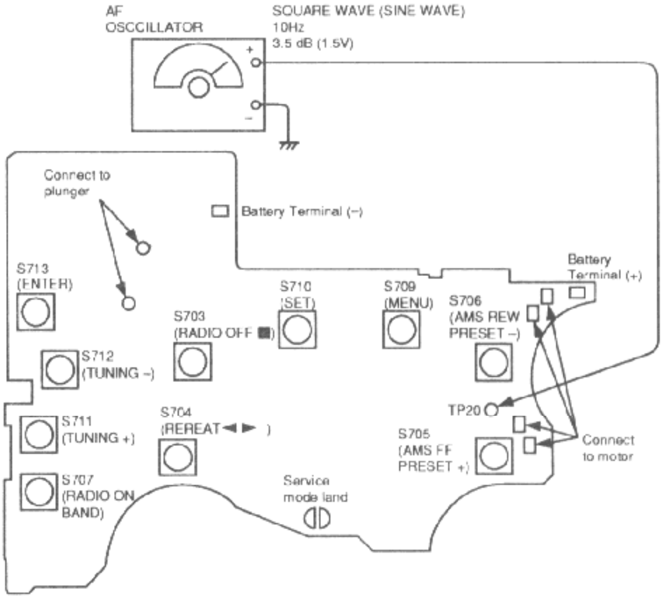
4. PLAY Mode
1) Set the preset state.
2) Press the ◁▷ switch. The lever (FR SW) will move to the F side once and then to the R side. Move the F/R switch (S701) according to this timing to set the PLAY (R side) mode. Press the ◁▷ switch another time and move the F/R switch (S701) according to the movement of the lever (FR SW) to set the PLAY (F side) mode.

Note 1 : If the above cannot be performed, start again from preset.

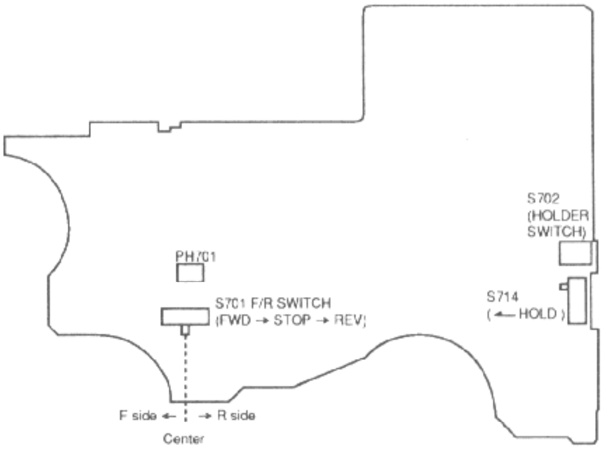
Note 2 : Use the remote control ◁▷, □, FF, and REW switches as much as possible. If the remote control is not available, do not touch S703 to S706 with the hand and use something with a round tip to press them.

[MAIN Board]

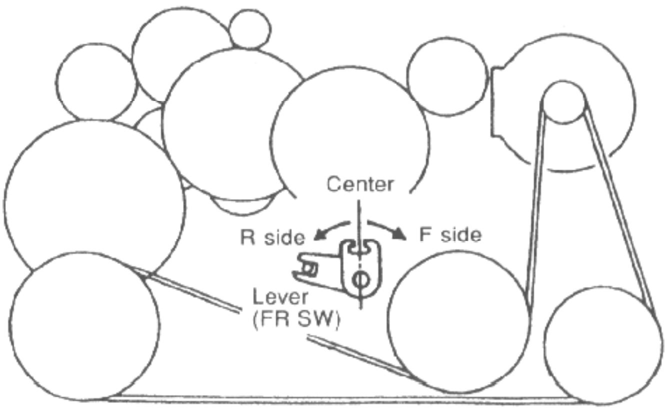
— Side A —


AF
OSCCILLATOR
SQUARE WAVE (SINE WAVE)
10Hz
3.5 dB (1.5V)
+
–
Connect to plunger
Battery Terminal (–)
Battery Terminal (+)
S713 (ENTER)
S710 (SET)
S709 (MENU)
S706 (AMS REW PRESET –)
S703 (RADIO OFF ■)
S712 (TUNING –)
TP20
S711 (TUNING +)
S704 (REREAT◄ ►)
S705 (AMS FF PRESET +)
Connect to motor
S707 (RADIO ON BAND)
Service mode land

— Side B —

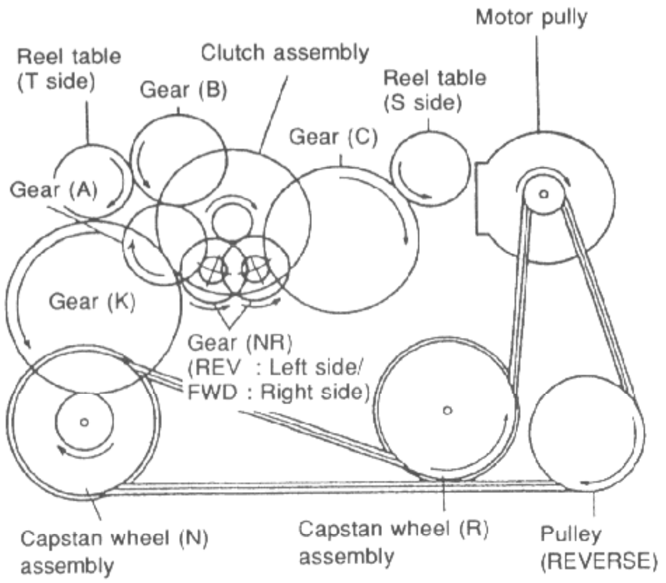

S702 (HOLDER SWITCH)
PH701
S701 F/R SWITCH (FWD → STOP → REV)
S714 (← HOLD)
F side ←
→ R side
Center

[Lever (FR SW)]

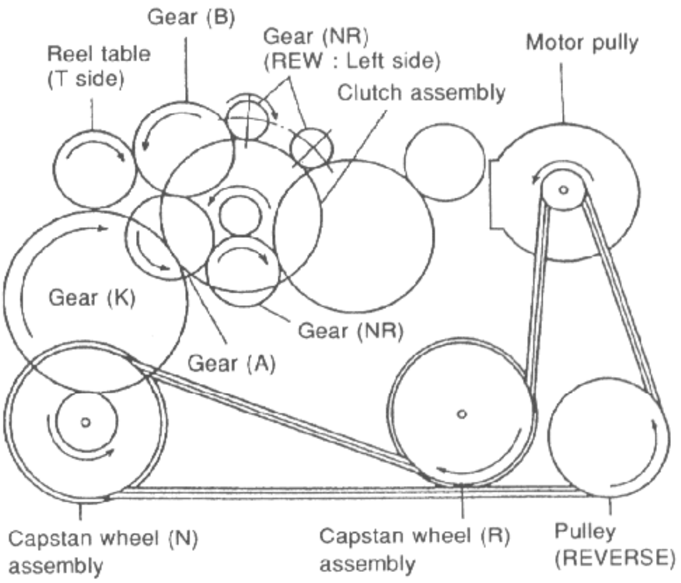

Center
R side
F side
Lever (FR SW)

[Rotation system]

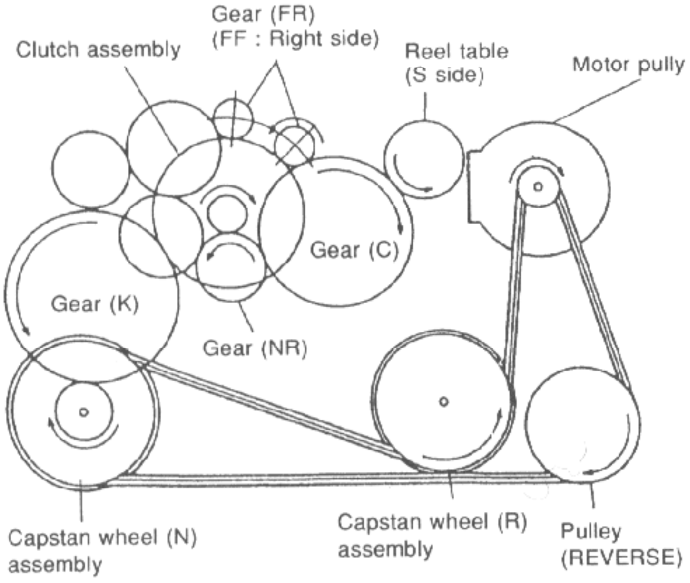
Rotation system during PLAY.


Motor pully
Reel table
(T side)
Clutch assembly
Gear (B)
Reel table
(S side)
Gear (C)
Gear (A)
Gear (K)
Gear (NR)
(REV : Left side/
FWD : Right side)
Capstan wheel (N)
assembly
Capstan wheel (R)
assembly
Pulley
(REVERSE)

Rotation system during REW.


Gear (B)
Reel table
(T side)
Gear (NR)
(REW : Left side)
Motor pully
Clutch assembly
Gear (K)
Gear (NR)
Gear (A)
Capstan wheel (N)
assembly
Capstan wheel (R)
assembly
Pulley
(REVERSE)

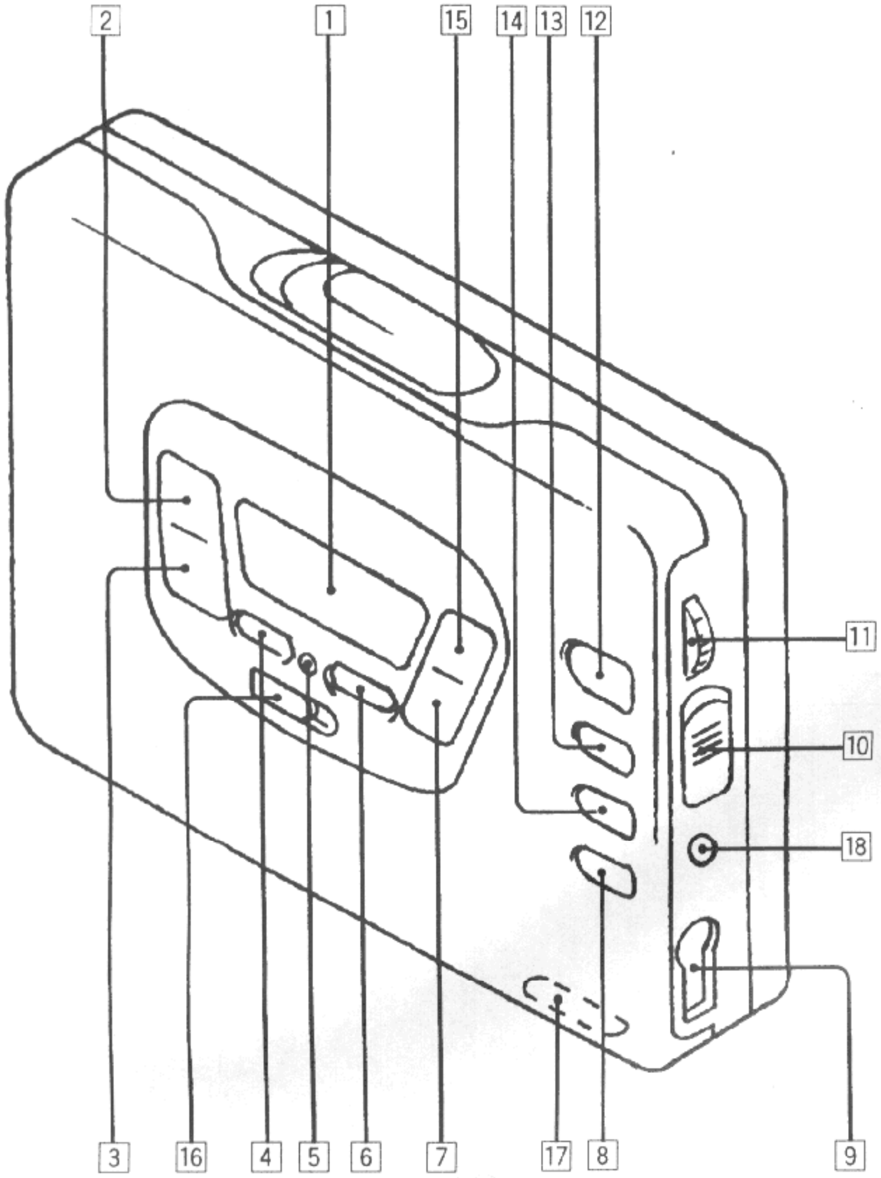
Rotation system during FF.


Gear (FR)
(FF : Right side)
Clutch assembly
Reel table
(S side)
Motor pully
Gear (C)
Gear (K)
Gear (NR)
Capstan wheel (N)
assembly
Capstan wheel (R)
assembly
Pulley
(REVERSE)

SECTION 2

GENERAL

FUNCTION OF CONTROL

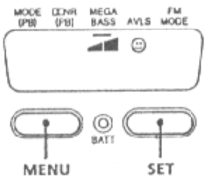


1 Display Window
2 PRESET +/AMS FF button
3 PRESET –/AMS REW button
4 MENU button
5 BATT indicater
6 SET button
7 ■/RADIO OFF button
8 ENTER button
9 ∩/REMOTE jack

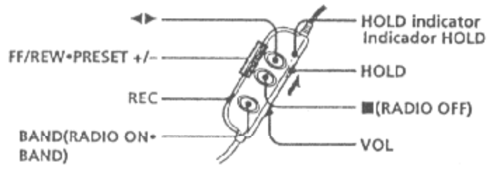
10 ←HOLD knob
11 VOLUME knob
12 RADIO ON/BAND button
13 TUNIG + button
14 TUNIG – button
15 ◄►/REPEAT button
16 REC switch
17 ISS switch
18 MIC jack

- ILLUST LATION : WM-GX614 MODEL

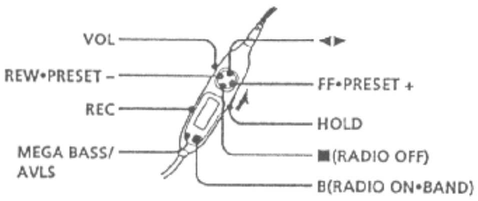
This section is extracted from instruction manual.


MODE (PB)
DDNR (PB)
MEGA BASS
AVLS
FM MODE
BATT
MENU
SET

GX612


◀▶
FF/REW•PRESET +/–
REC
BAND(RADIO ON•BAND)
HOLD indicator
Indicador HOLD
HOLD
■(RADIO OFF)
VOL

GX614


VOL
REW•PRESET –
REC
MEGA BASS/AVLS
◀▶
FF•PRESET +
HOLD
■(RADIO OFF)
B(RADIO ON•BAND)

Receiving Stations Outside Your Country

The frequency range differs depending on the area (see the chart "Area indication and frequency range"). If you listen to the radio in an area of different frequency range, change the area indication.

1. Press RADIO ON•BAND to turn on the radio.
2. Press ENTER.
3. Press and hold BAND•RADIO ON until the area indication flashes in the display.
4. Press BAND•RADIO ON repeatedly to select the following area "Eur", "JPn" or "USA" and press ENTER.
5. Tune in to and store stations as necessary following the procedure of the "Listening to the Radio" and "Presetting Radio Stations".

Area indication and frequency range

Area*	Frequency range FM (MHz)	AM(kHz)
Eur	87.5–108.0	531–1,602
JPn	76.0–90.0	531–1,710
USA	87.5–108.0	530–1,710

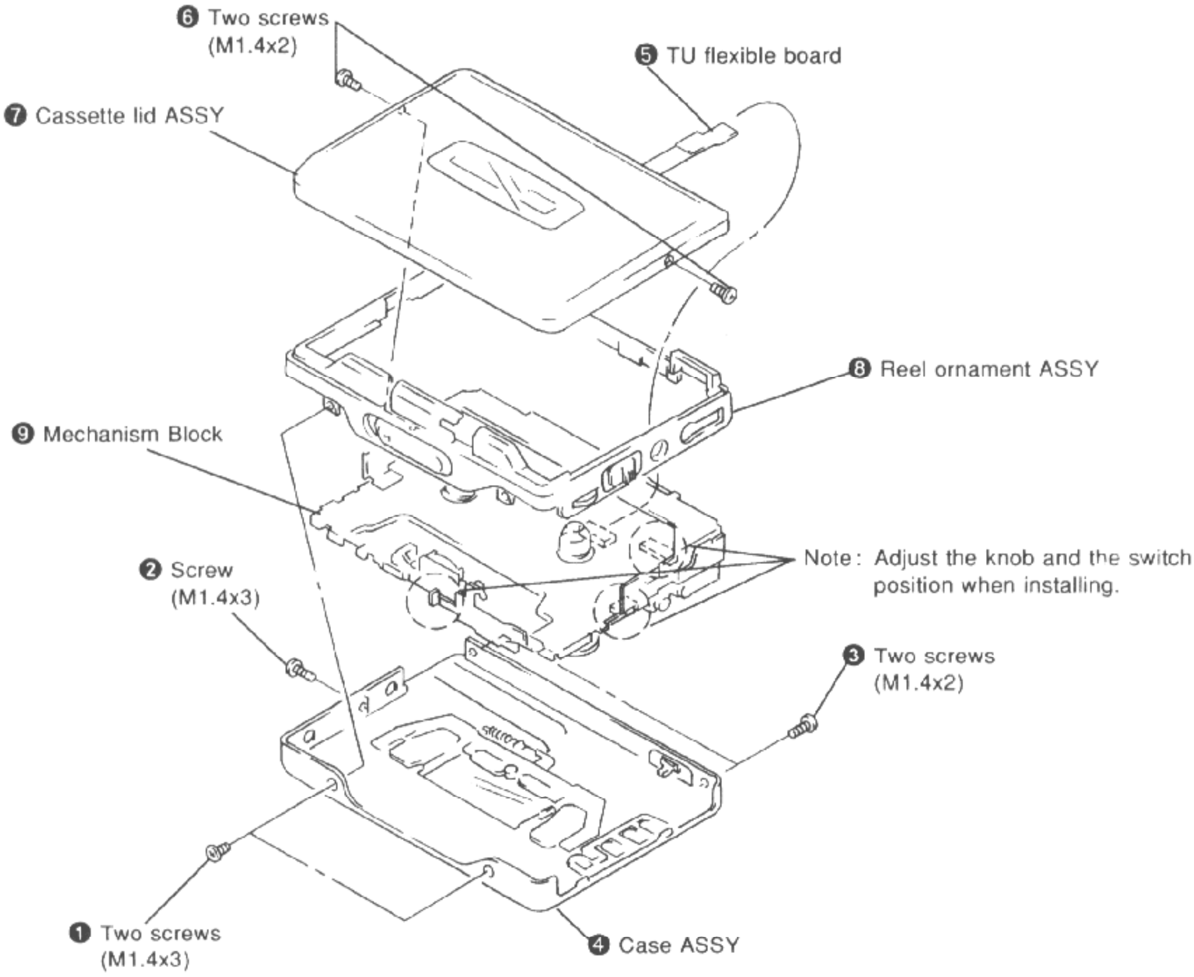
*Eur : European and other countries
JPn : Japan
USA : USA and Canada

SECTION 3

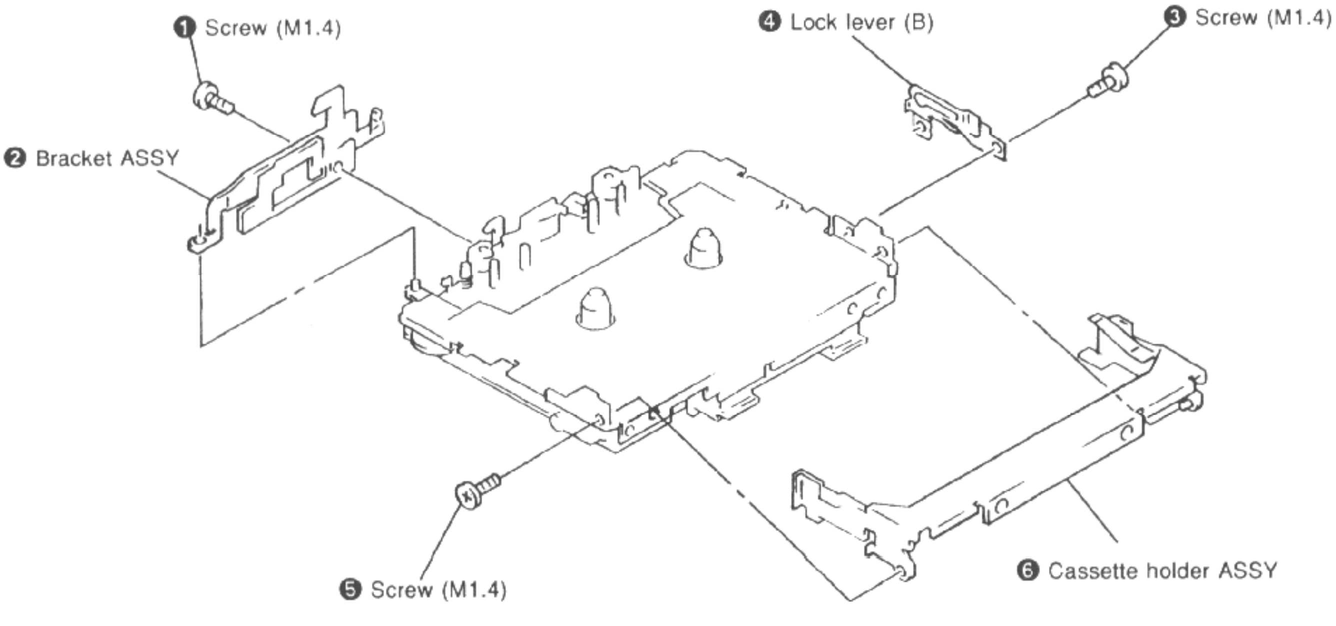
DISASSEMBLY

Note : Follow the disassembly procedure in the numerical order given.

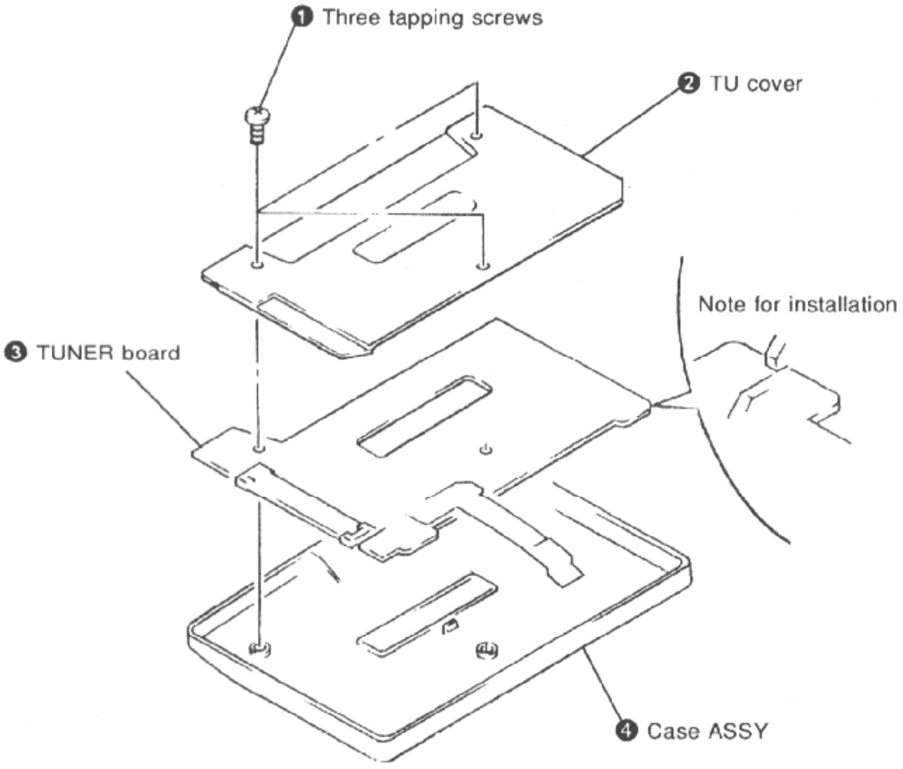
3-1. CASSETTE LID ASSY AND CASE ASSY


❻ Two screws (M1.4x2)
❺ TU flexible board
❼ Cassette lid ASSY
❽ Reel ornament ASSY
❾ Mechanism Block
❷ Screw (M1.4x3)
Note: Adjust the knob and the switch position when installing.
❸ Two screws (M1.4x2)
❶ Two screws (M1.4x3)
❹ Case ASSY

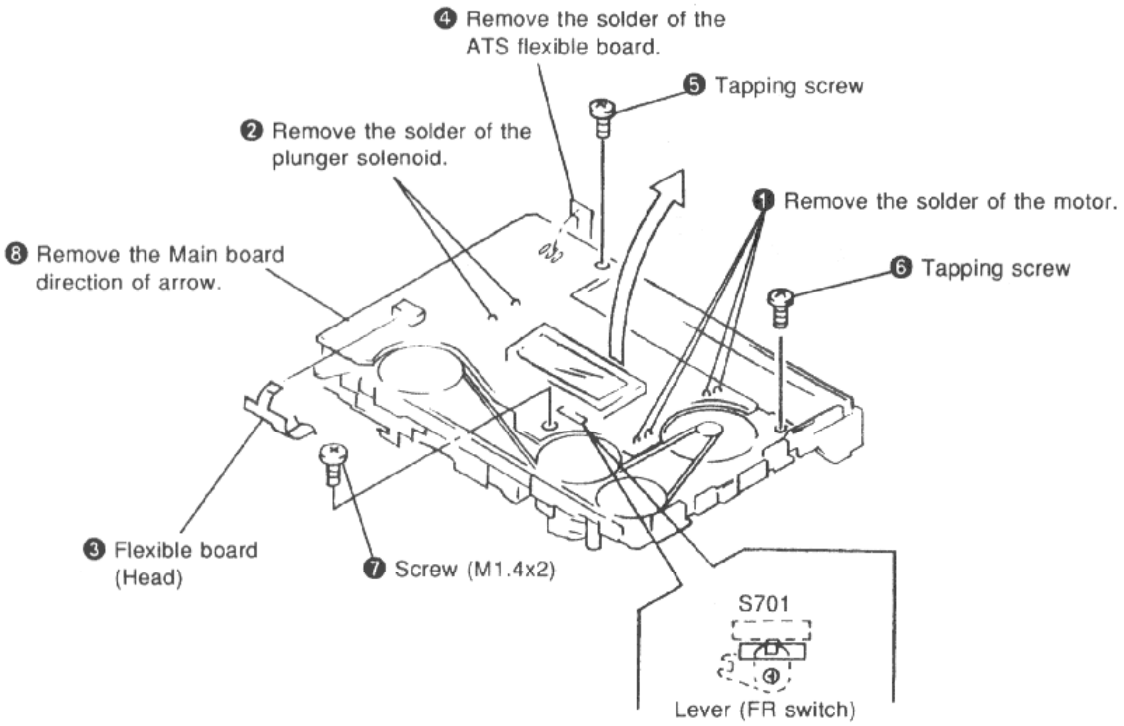
3-2. BRACKET ASSY AND CASSETTE HOLDER ASSY


❶ Screw (M1.4)
❹ Lock lever (B)
❸ Screw (M1.4)
❷ Bracket ASSY
❺ Screw (M1.4)
❻ Cassette holder ASSY

3-3. TUNER BOARD


❶ Three tapping screws
❷ TU cover
Note for installation
❸ TUNER board
❹ Case ASSY

3-4. MAIN BOARD


❹ Remove the solder of the ATS flexible board.
❺ Tapping screw
❷ Remove the solder of the plunger solenoid.
❶ Remove the solder of the motor.
❽ Remove the Main board direction of arrow.
❻ Tapping screw
❸ Flexible board (Head)
❼ Screw (M1.4x2)
S701
Lever (FR switch)

Note : Confirm if the switch lever installs it self in the groove of a lever (FR switch) for assembling.

SECTION 4

MECHANICAL ADJUSTMENT

PRECAUTION

1. Before adjusting, clean the following parts with a piece of cotton moistened with alcohol.

playback head	pinch roller
rubber belt	capstan

2. Demagnetize the playback head using a head demagnetizer.
3. Do not use a magnetized screwdriver for adjustments.
4. After adjusting, apply screw-locking compound onto the adjusted parts.
5. Unless specified otherwise, use a specified voltage (1.3V) to perform the adjustments.

[Torque Measurement]

Mode	Torque Meter	Meter Reading
FWD	CQ-102C	18 — 33 g • cm
FWD Back tension		0.5 — 3.0 g • cm
REV	CQ-102RC	18 — 33 g • cm
REV Back tension		0.5 — 3 g • cm
FF	CQ-201B	More than 40 g • cm
REW		

SECTION 5

ELECTRICAL ADJUSTMENT

PRECAUTION

1. Specified voltage : 1.3V.
2. Switch position
   DOLBY NR switch : OFF
   MEGA BASS switch : NORM
   AVLS : OFF

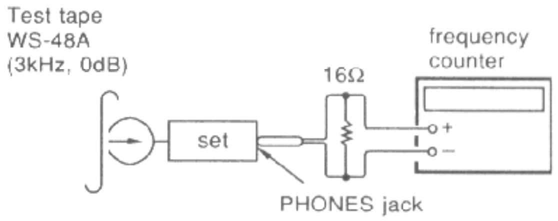
CASSETTE SECTION

Test tape

Type	Signal	Used for
WS-48A	3 kHz, 0 dB	Tape Speed Adjustment

[Tape Speed Adjustment]

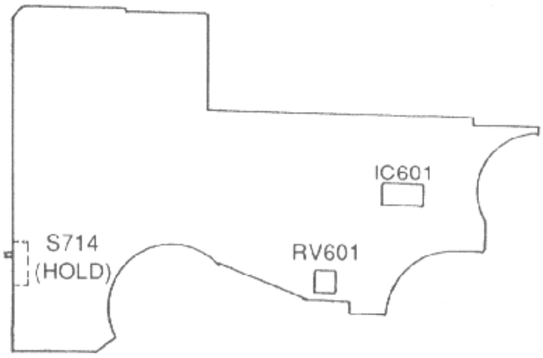
Procedure :



1. Playback WS-48A (tape center part) in the FWD state and adjust RV601 so that the frequency counter reading becomes 3000 ± 10 Hz.
2. Playback WS-48A (tape center) in the REV state. Check that the frequency counter reading is within 2.5% of the reading of step 1.

Adjustment Point :

[MAIN BOARD] — Component side —

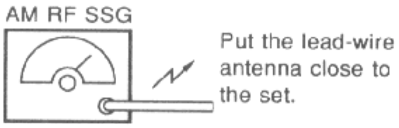


TUNER SECTION

[AM]

BAND switch : AM

NOTE : The adjustment should be performed setting the area indication to "Eur". (Refer to "Receiving Stations Outside Your Country" on page 6.)
After the adjustment, reset the area indication as it was.

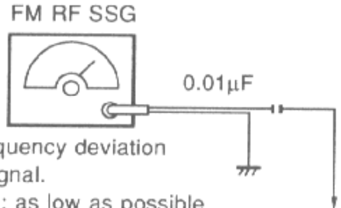


Put the lead-wire antenna close to the set.

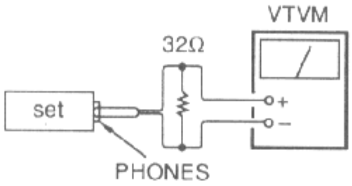
30% amplitude modulation by 400Hz signal
output level : as low as possible

[FM]

BAND switch : FM


FM RF SSG
0.01µF
to ANT (TP1)

22.5kHz frequency deviation by 400Hz signal.
output level : as low as possible


VTVM
32Ω
set
+
−
PHONES

- Repeat the procedures in each adjustment several times, and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.

AM IF ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
T2	450 kHz

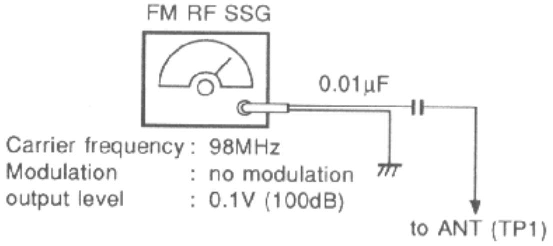
AM VT VOLTAGE ADJUSTMENT	
1.5 V	
T1	531 kHz

AM TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L5	621 kHz
CT1	1,395 kHz

FM IF ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L3	10.7 MHz

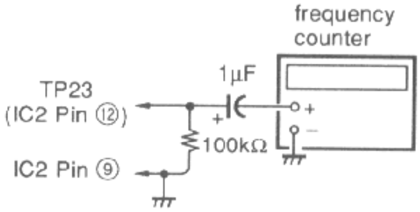
[FM VCO Adjustment]

Procedure :


FM RF SSG
0.01µF
to ANT (TP1)

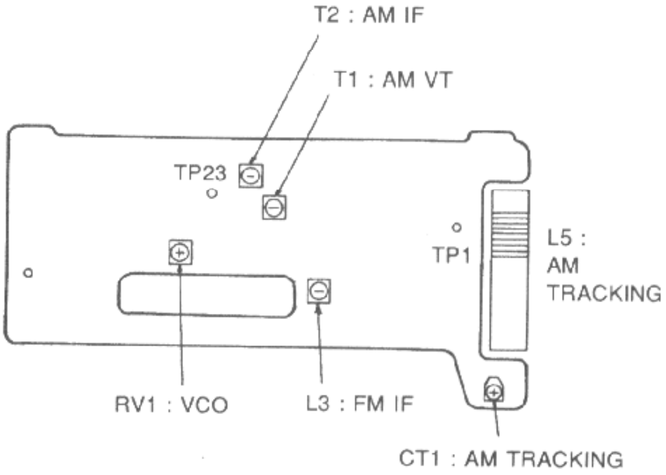
Carrier frequency : 98MHz
Modulation : no modulation
output level : 0.1V (100dB)

1. Connect frequency counter to the positions shown below.
2. Tune the to 98 MHz.
3. Adjust RV1 for 19 kHz ± 100Hz reading on the frequency counter.


frequency counter
TP23
(IC2 Pin ⑫)
1µF
+
100kΩ
+
−
IC2 Pin ⑨

- **Adjustment Parts Location**

[TUNER BOARD] — Component side —


T2 : AM IF
T1 : AM VT
TP23
TP1
L5 : AM TRACKING
RV1 : VCO
L3 : FM IF
CT1 : AM TRACKING

SECTION 6

DIAGRAMS

6-1. IC PIN FUNCTIONS

• IC501 BA3641FV REC AMP

Pin No.	Pin Name	I/O	Function
1	TAU	I/O	ALC detect output
2	STBY	I	IC power switch
3	MIC MUTE	I	Mic amp mute control
4	REC IN2	I	REC amp monitor amp input
5	REC IN1	I	REC amp monitor amp input
6	MIC OUT1	I/O	Mic amp output
7	MIC OUT2	I/O	Mic amp output
8	Vref	I	Reference voltage input
9	MIC IN2	I	Mic amp input
10	MIC IN1	I	Mic amp input
11	RF	I	Ripple filter voltage input
12	Vcc	I	Power supply 2.5V
13	+B	I	Power supply 1.5V
14	base	O	Regulator control
15	RNF	I	Regulator nagative feedback
16	REC OUT1	I/O	REC amp output
17	REC OUT2	I/O	REC amp output
18	MONI OUT1	I/O	Monitor amp output
19	MONI OUT2	I/O	Monitor amp output
20	GND	I	GND (sub terminal)

• IC701 MSM63120B SYSTEM CONTROL

Pin No.	Pin Name	I/O	Function
1	BEEP	O	Beep signal output (TC system=1.6 kHz, CF system=3.0 kHz)
2	DDC CTL	O	ON/OFF control output of DC-DC converter and amplifier (when DDC on=L)
3	MUTE	O	Audio muting control output (when MUTE ON=L)
4	F/R	O	Head select output (when FWD=H, when REV=L)
5	DOLBY	O	DOLBY ON/OFF control output (when DOLBY ON=L)
6	DBB ON/OFF	O	Tone control output (when DBB ON=H)
7	DBB MID/MAX	O	Tone control output (when DBB ON=L)
8	AVLS	O	AVLS ON/OFF control output (when AVLS ON=L)
9	PRE SW	O	TC/RADIO select output of preamplifier (when TC=L, when RADIO=H)
10	AMP CTL	O	Audio amplifier control (when AMP ON=H)
11	REC CTL	O	REC control output (when REC=H)
12	PHOTO CTL	O	Output for rotation detect intermittent
13	LED CTL	O	LED control output (when LED ON=H)
14	PL CTL	O	Plunger control output
15	M-CTL	O	Motor control output
16	M-DIR	O	Motor rotating direction control output

Pin No.	Pin Name	I/O	Function
17	M-BRK	O	Motor brake control (not used)
18	TEST	—	Test pin (open)
19	OSC2	—	Resistor connect pin for CR oscillator (800 kHz). (open)
20	OSC1	—	Resistor connect pin for CR oscillator (800 kHz). (open)
21	VDD	—	Power supply connect terminal
22	XTB	—	Crystal oscillator connect terminal
23	XT	—	Crystal oscillator connect terminal
24	VSS1	—	Power supply connect terminal
25	VSS2	—	Internal power supply step-up terminal
26	VCM	—	Internal power supply step-up terminal
27	VCP	—	Internal power supply step-up terminal
28	VSSL	—	Internal power supply step-up terminal
29	CMP1	I	Rotation detect input
30	CMP2	I	Rotation detect input
31	KEY1	I	Key input
32	KEY2	I	Key input
33	MODE2	I	Mode select input (connect to GND)
34	A/B	I	Tape A/B side detection switch input (connect to GND)
35	HOLDER	I	Holder keying switch (close=L)
36	FWD SW	I	MD mode switch (when FWD PLAY=on)
37	REV SW	I	MD mode switch (when REV PLAY=on)
38	RMUM	I	With No remote commander (with=H)
39	RQT	I	Data request of LCD driver
40	DRQT	I/O	Communication request output to the remote commader.
41	TI	I	Communication to PLL/EEPROM
42	TCLK	O	Communication to PLL/EEPROM
43	TO	O	Communication to PLL/EEPROM
44	RO	O	Communication to the remote commander
45	—	I	Connect to GND
46	RCLK	O	Communication to the remote commander
47	CE	O	Communication to PLL
48	CS	O	Communication to EEPROM
49	VDD	—	Power supply connection terminal
50	RADIO CTL	O	Radio control output (when RADIO=H)
51	AMS IN	I	Recording sound detection input (with music=H)
52	MODE1	I	Mode select input (connected to GND)
53	N-TUME	I	Erasing error detect (FWD) (fixed at “H”)
54	R-TUME	I	Erasing error detect (REV) (fixed at “H”)
55	SET STOP	I	For power failure stop
56	RESET	I	Reset terminal

- **IC702 SMC62L3A LCD DRIVE**

Pin No.	Pin Name	I/O	Function
1	COM2	O	LCD common signal output
2	COM3	O	LCD common signal output
3	SEG0	O	LCD segment signal output (not used) (open)
4	SEG1	O	LCD segment signal output (not used) (open)
5	SEG2	O	LCD segment signal output
6	SEG3	O	
7	SEG4	O	
8	SEG6	O	
9	SEG8	O	
10	SEG9	O	
11	SEG10	O	
12	SEG11	O	
13	SEG12	O	
14	SEG13	O	
15	SEG14	O	
16	SEG15	O	
17	SEG16	O	
18	SEG17	O	
19	SEG18	O	
20	SEG19	O	
21	TEST	I	Test signal input (connect to GND)
22	—	I	Not used (open)
23	RCLK	I	Clock input for receiver
24	—	O	Not used (open)
25	RDATA	I	Data input for receiver
26	NC	—	Not used (open)
27	RESET	I	Reset signal input
28	INT	I	Interruptt signal input for receiver
29	HOLD SW	I	Hold switch signal input
30	HOLD KEY	I	Input terminal at key pressing in HOLD condition
31	—	I	Not used (open)
32	RQT	O	Retransmission Request output
33	—	O	Not used (open)
34	—	O	Not used (open)
35	—	O	Not used (open)
36	VSS	(I)	Power supply minus terminal
37	VDD	(I)	Power supply plus terminal
38	OSC1	I	CR oscillator input
39	OSC2	O	CR oscillator output
40	VS1	O	Regulator output
41	CA	—	Step-up capacitor connection terminal
42	CB	—	
43	CC	—	
44	VL1	O	Regulator output of LCD system
45	VL2	O	Step-up output of LCD system
46	VL3	O	Step-up output of LCD system
47	COM0	O	Common output of LCD system
48	COM1	O	Common output of LCD system

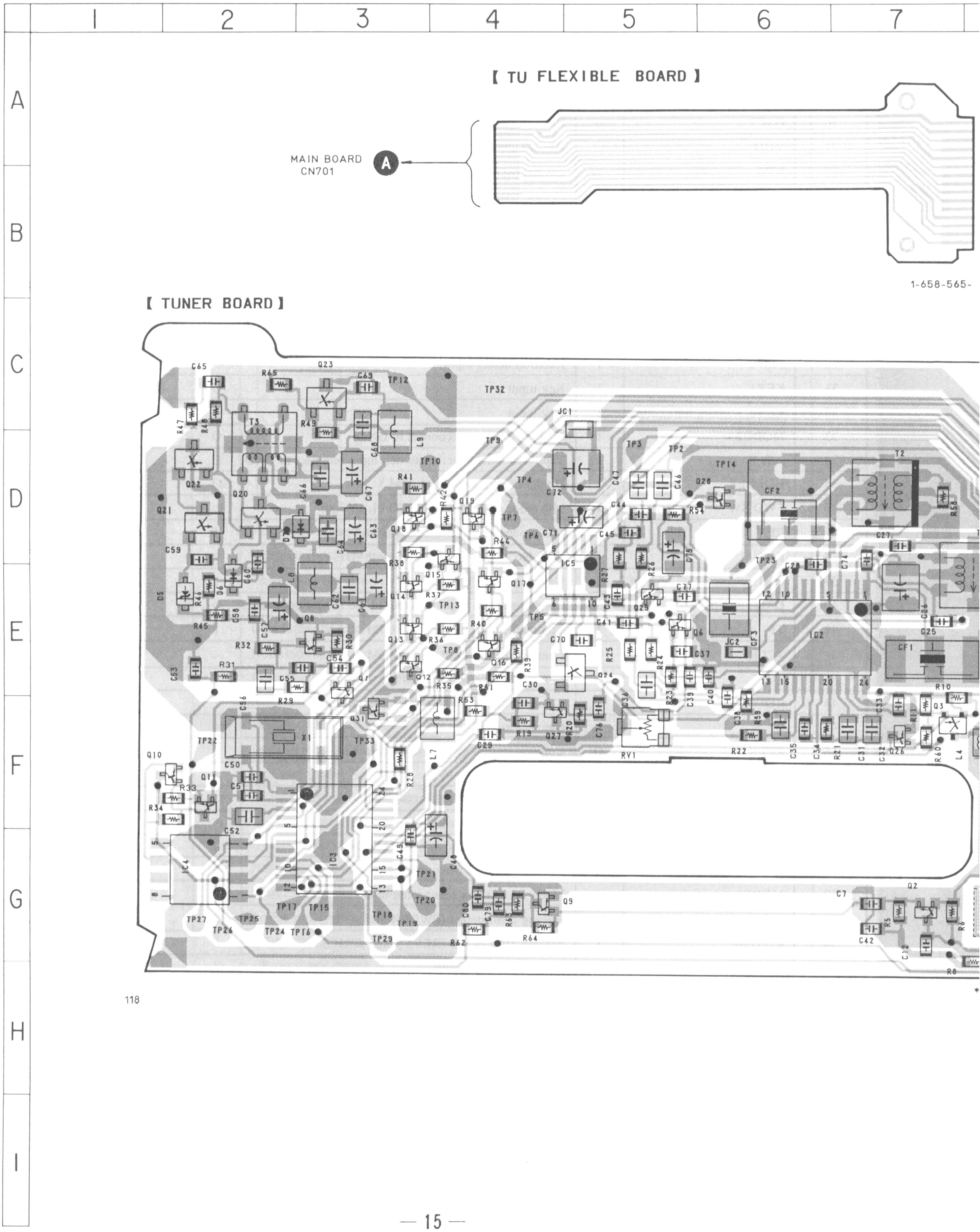
- **Semiconductor Location**

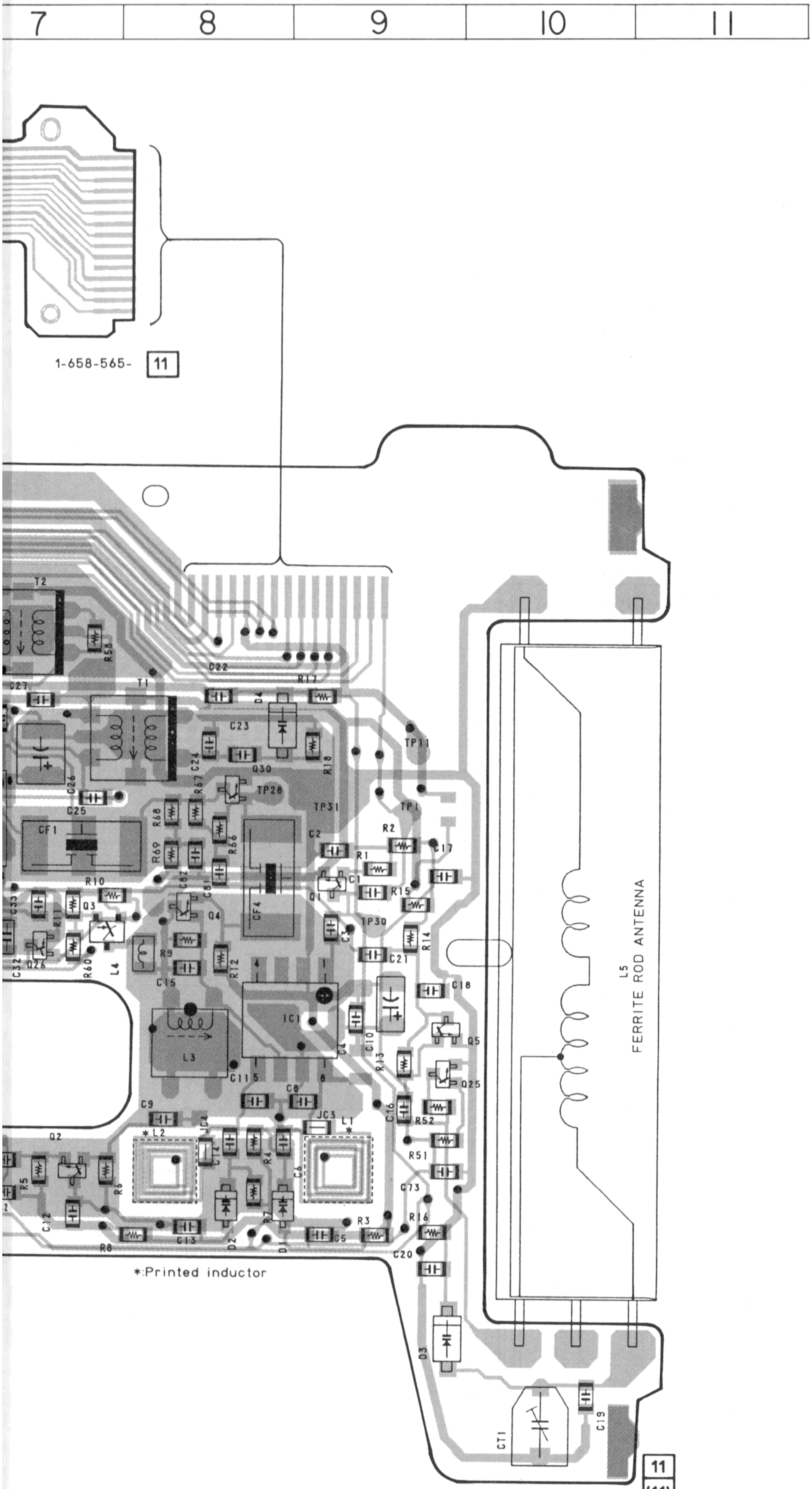
Ref. No.	Location
D1	G-8
D2	G-8
D3	H-9
D4	E-8
D5	E-2
D6	E-2
D7	D-3
IC1	F-8
IC2	E-6
IC3	G-3
IC4	G-2
IC5	E-5
Q1	E-9
Q2	G-7
Q3	F-7
Q4	F-8
Q5	F-9
Q6	E-5
Q7	E-3
Q8	E-3
Q9	G-4
Q10	F-2
Q11	F-2
Q12	E-3
Q13	E-3
Q14	E-3
Q15	D-4
Q16	E-4
Q17	E-4
Q18	D-3
Q19	D-4
Q20	D-2
Q21	D-2
Q22	D-2
Q23	C-3
Q24	E-5
Q25	G-9
Q26	F-7
Q27	F-4
Q28	D-6
Q29	E-5
Q30	E-8
Q31	F-3

Note:

- ● : Through hole.
- ▨ : Pattern from the side which enable seeing.
- ▨ : Pattern of the rear side.

6-2. PRINTED WIRING BOARD — TUNER SECTION —

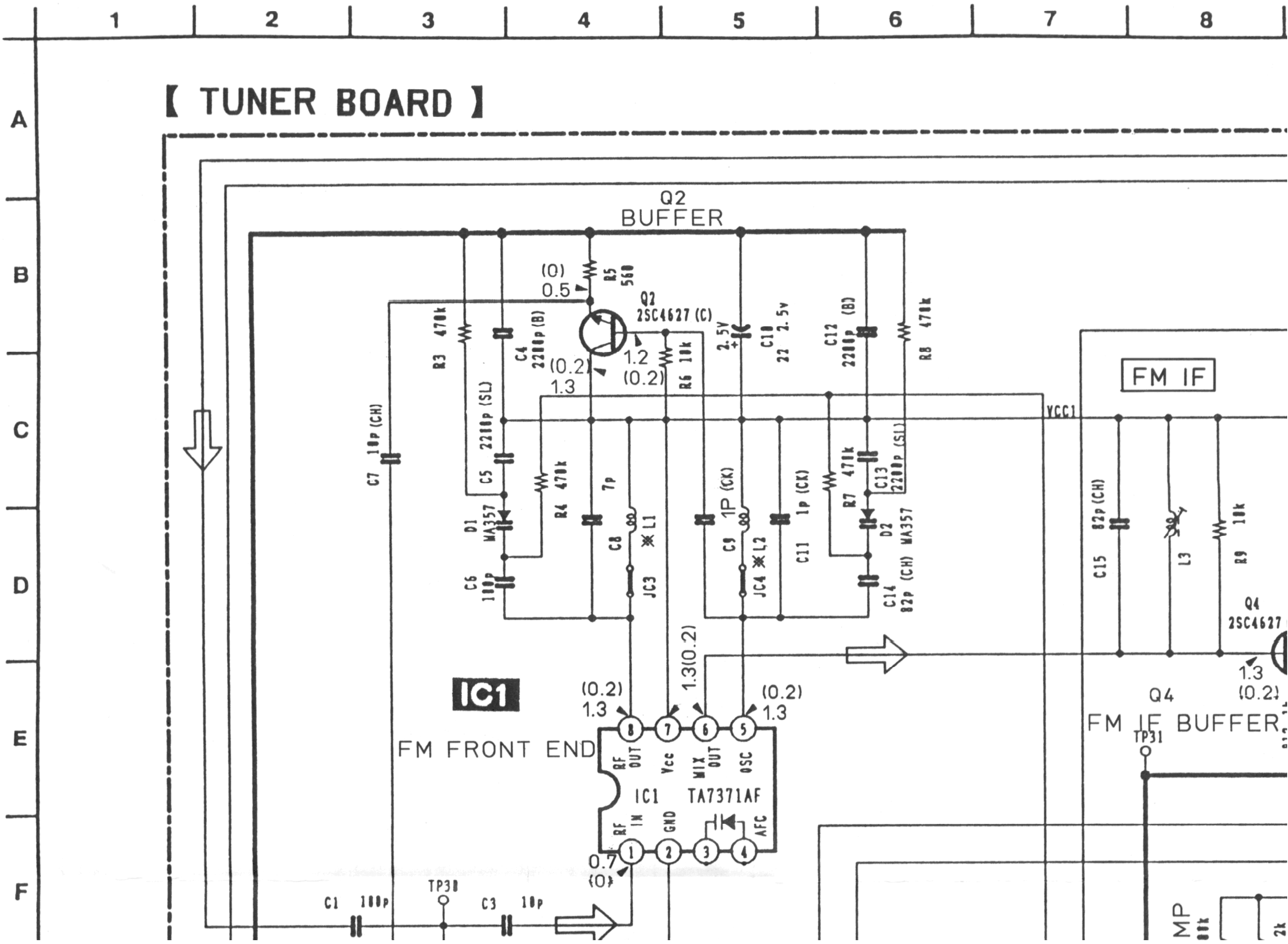

1
2
3
4
5
6
7
A
B
C
D
E
F
G
H
I
【 TU FLEXIBLE BOARD 】
MAIN BOARD
CN701
A
1-658-565-
【 TUNER BOARD 】
C65
R65
Q23
C69
TP12
TP32
R47
R48
T3
R49
C68
L9
JC1
TP9
TP3
TP2
TP14
T2
TP10
R41
R42
TP4
C47
C46
Q28
CF2
Q22
Q20
C66
C67
Q19
C72
C44
R54
R58
Q21
D7
C64
C63
Q18
TP7
C71
C45
TP6
C27
C59
R44
R38
Q15
IC5
R27
R26
C75
TP23
C28
C74
C60
L8
C62
C61
Q14
R37
TP13
Q17
C43
C77
Q29
D5
R46
D6
C58
C57
Q8
R40
TP5
C41
Q6
JC2
CF3
IC2
C24
C25
R45
R32
R30
Q13
R36
TP8
C70
R25
R24
C37
CF1
C53
R31
C55
C54
Q7
Q12
R35
Q16
R39
C30
Q24
R10
C56
R29
Q31
R53
R41
C36
R23
C39
C40
C38
R59
C33
R11
Q3
TP22
X1
TP33
L7
C29
R19
R20
Q27
C76
RV1
R22
C35
C34
R21
C31
C32
Q26
R60
L4
Q10
C50
Q11
R33
C51
R28
R34
C52
C49
C48
IC4
IC3
TP21
TP20
C80
C79
R63
Q9
Q2
C7
TP27
TP25
TP26
TP17
TP15
TP24
TP16
TP18
TP19
TP29
R62
R64
R5
R6
C42
C12
R8
118

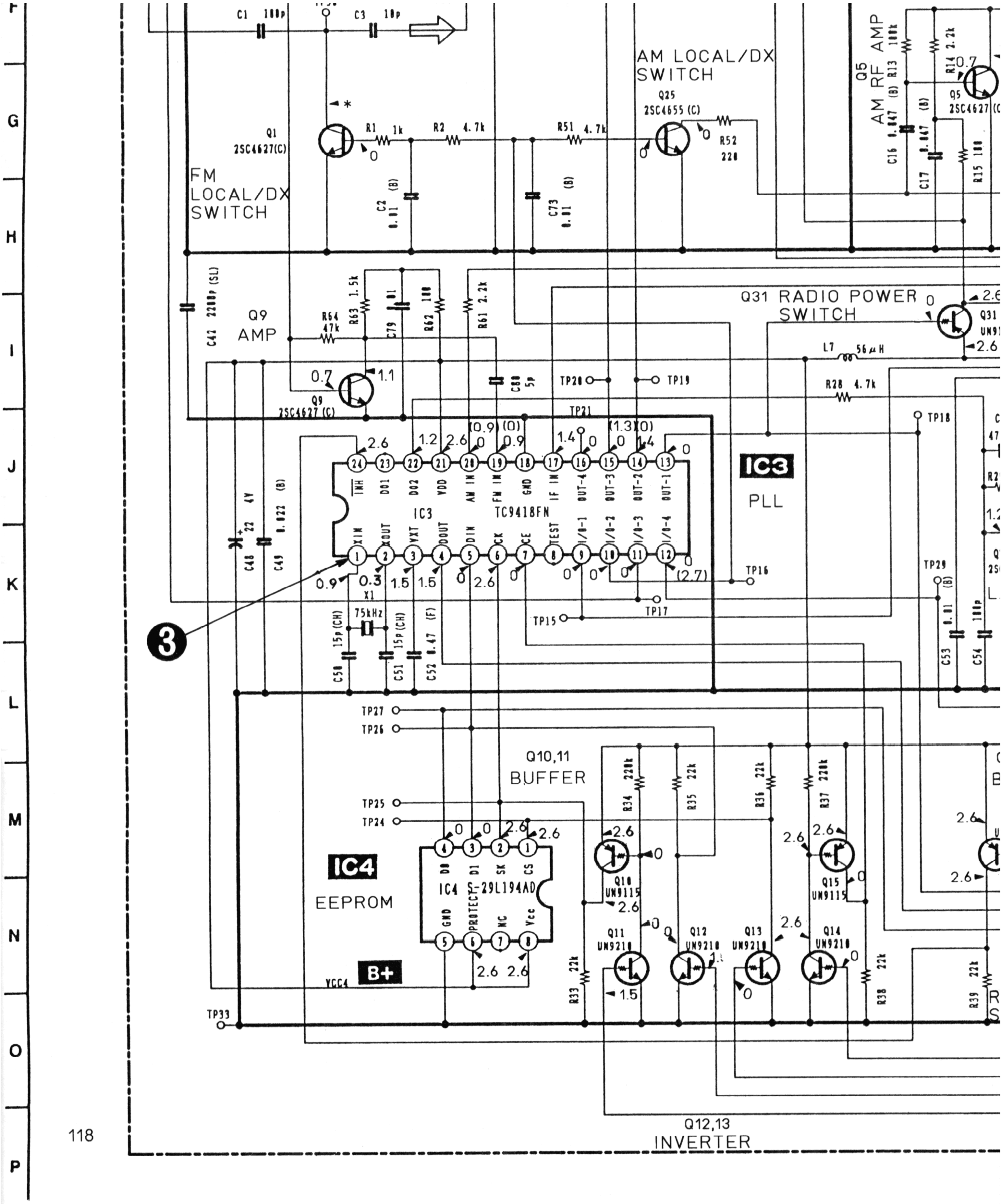

7
8
9
10
11
1-658-565-
11
T2
R58
C27
T1
C22
R17
D4
C23
R18
TP11
C24
Q30
C26
C25
R67
TP28
TP31
TP1
CF1
R68
R69
R66
C2
R2
C17
R1
C1
Q1
R15
C82
C81
CF4
R10
Q3
Q4
R11
C33
Q26
C32
R60
L4
R9
R12
TP30
C3
R14
C21
C15
C18
L5
FERRITE ROD ANTENNA
IC1
L3
C10
C4
R13
Q5
Q25
C11
C8
C9
JC3
L1
*
C16
R52
Q2
*
L2
JC4
C14
R4
R51
C6
R5
R6
C73
C12
D2
R7
D1
R3
C5
R16
R8
C13
C20
D3
CT1
C19
11
(11)
1-658-890-

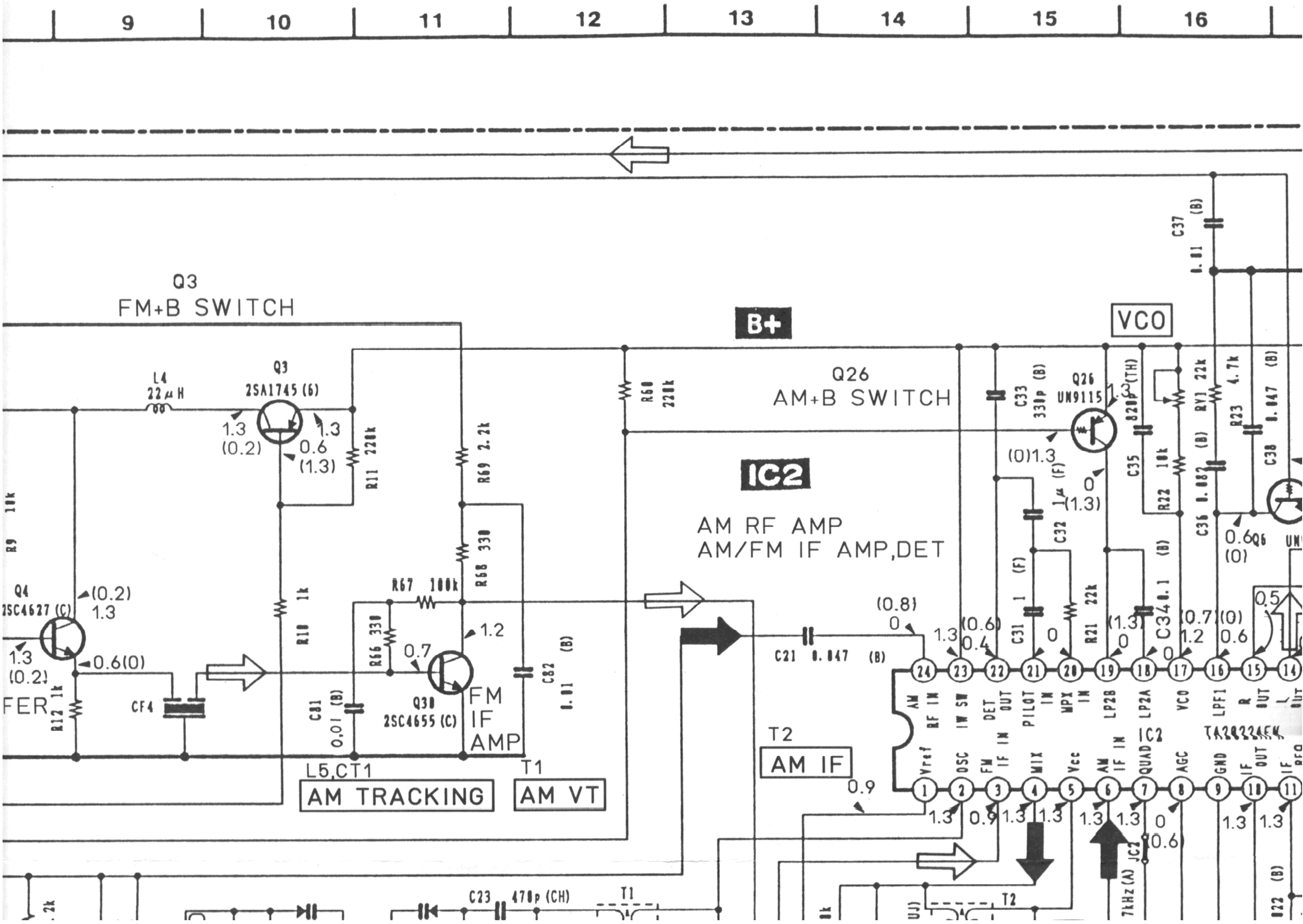
*:Printed inductor

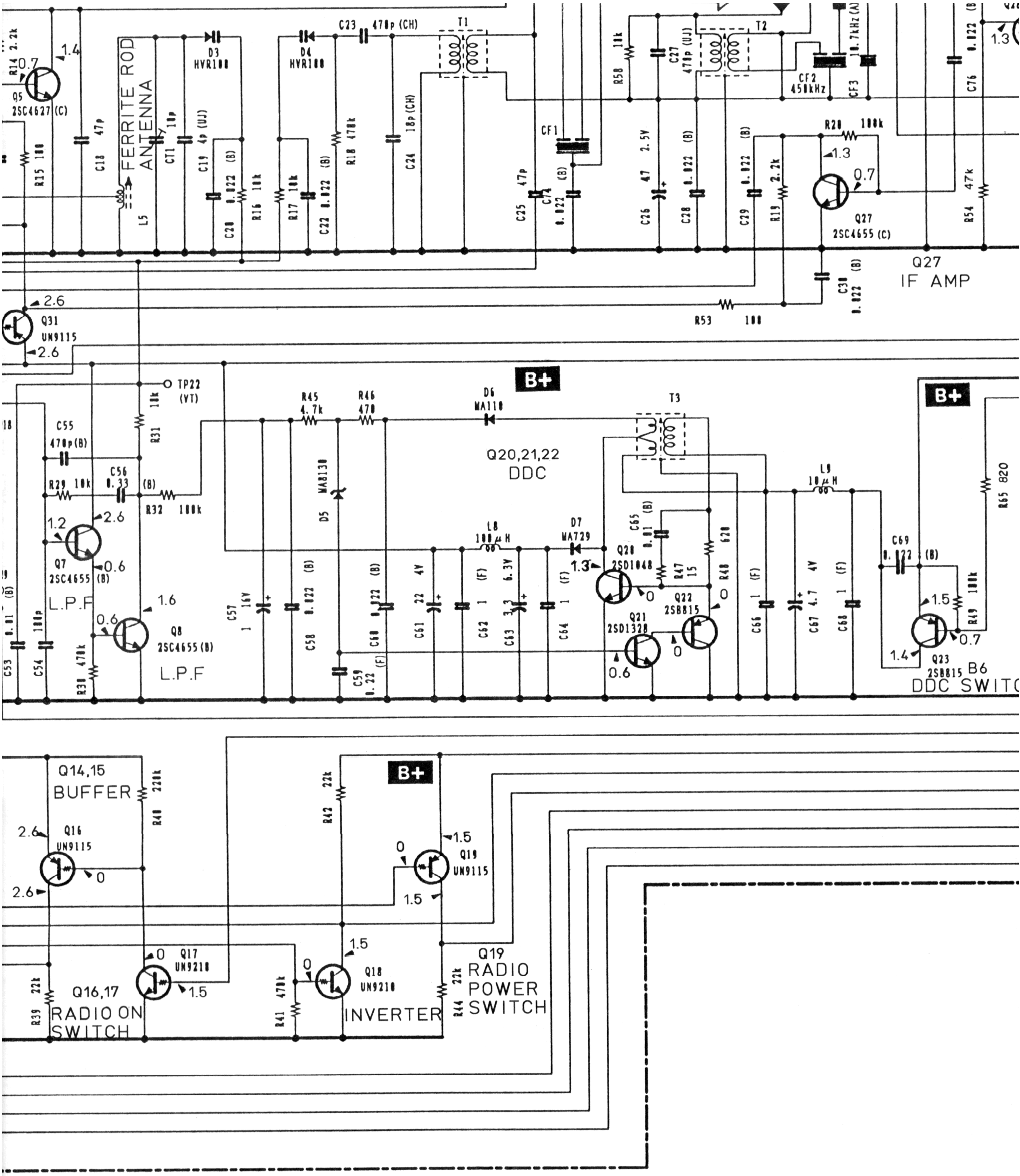
6-3. SCHEMATIC DIAGRAM — TUNER SECTION —

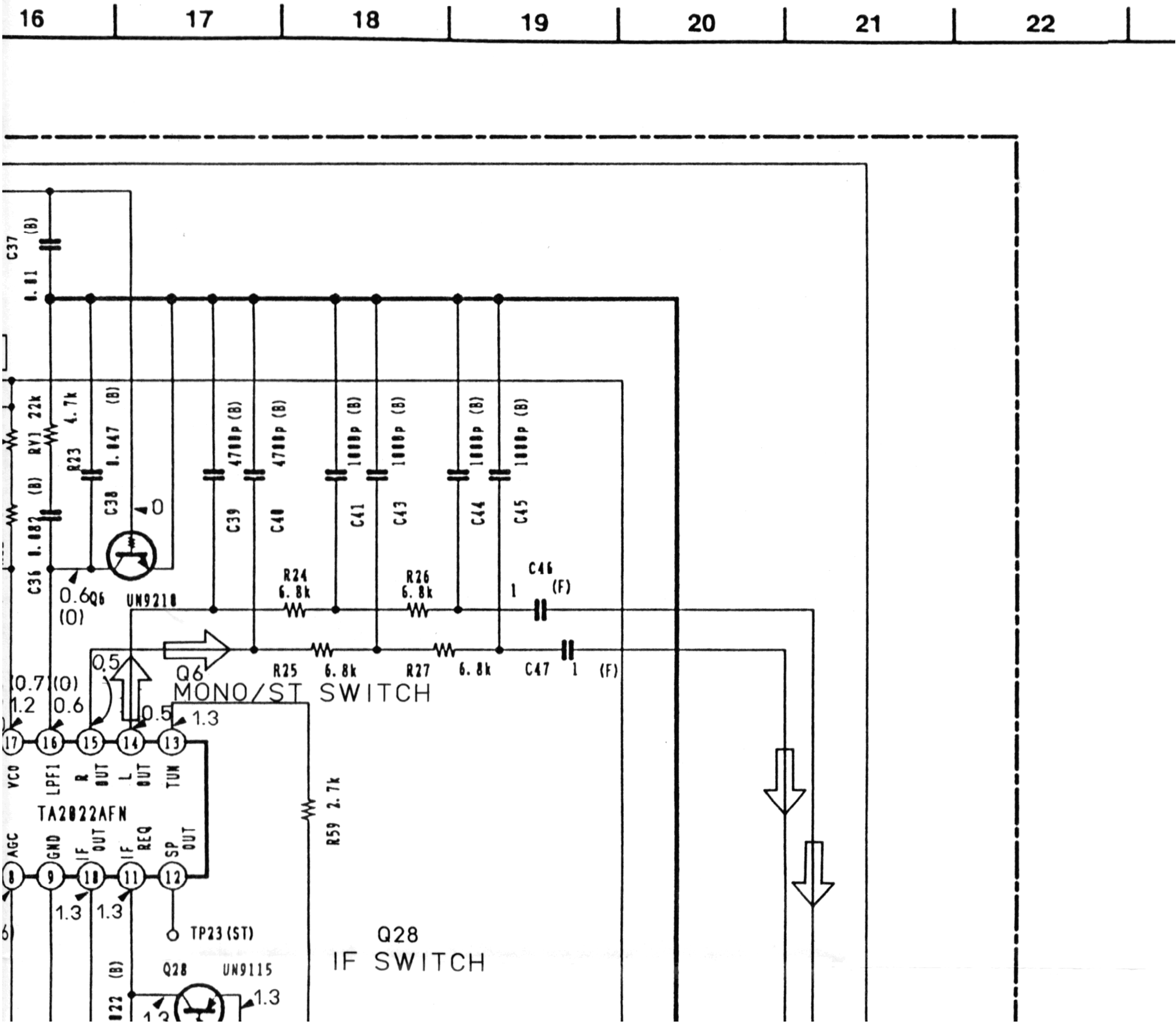
• See page 31 for IC Block Diagrams.

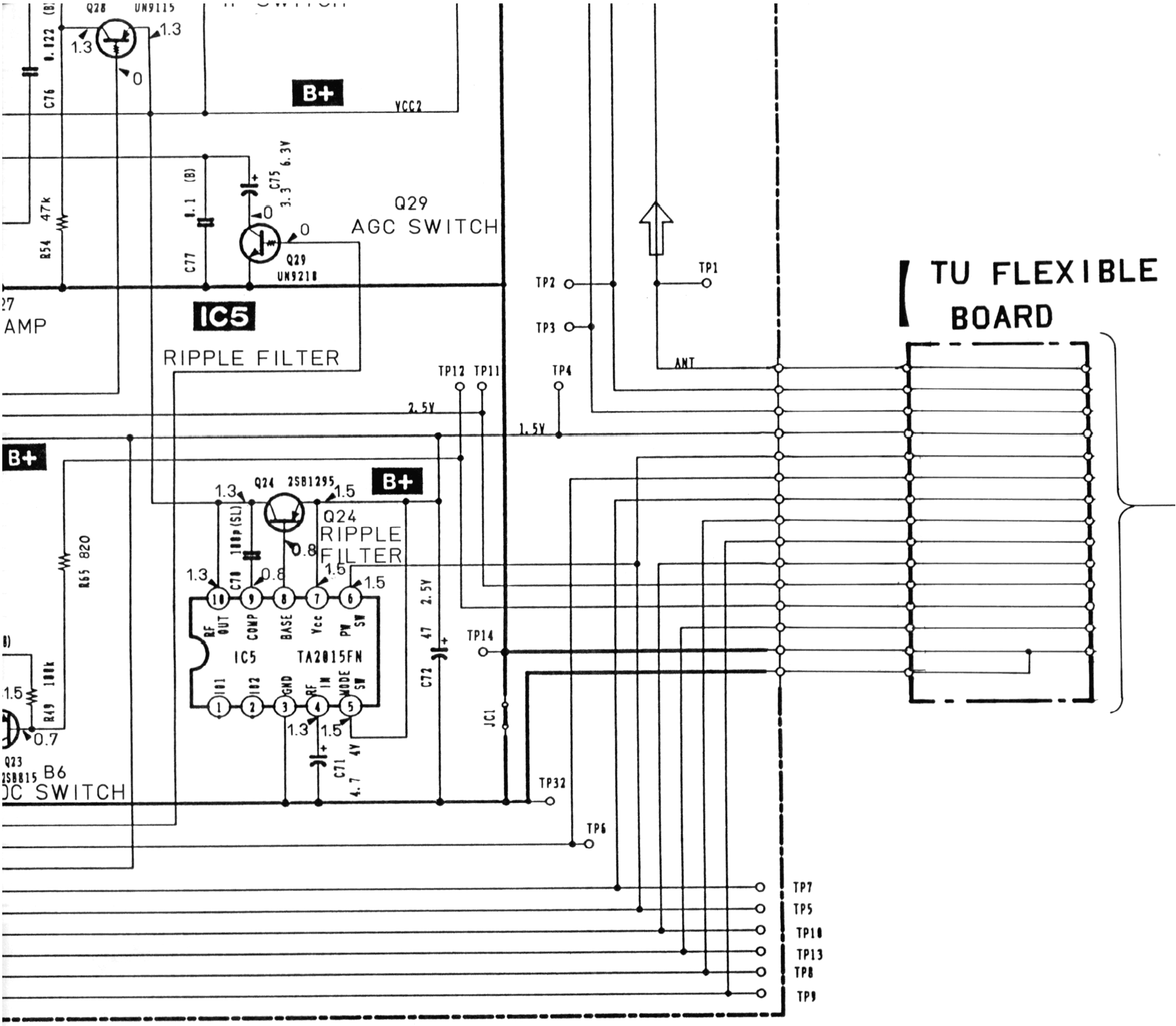

1
2
3
4
5
6
7
8
A
B
C
D
E
F
【 TUNER BOARD 】
Q2
BUFFER
(0)
0.5
R5 560
Q2
2SC4627 (C)
R3 470k
C4 2200p (B)
(0.2)
1.3
1.2
(0.2)
R6 10k
2.5V
C10 22 2.5v
C12 2200p (B)
R8 470k
FM IF
VCC1
C7 10p (CH)
C5 2200p (SL)
R4 470k
7p
C13 2200p (SL)
R7 470k
D1 MA357
C8
L1
C9 1P (CK)
L2
C11 1p (CK)
D2 MA357
C15 82p (CH)
L3
R9 10k
C6 100p
JC3
JC4
C14 82p (CH)
Q4
2SC4627
1.3(0.2)
1.3
(0.2)
IC1
(0.2)
1.3
(0.2)
1.3
Q4
FM IF BUFFER
TP31
FM FRONT END
RF OUT
Vcc
MIX OUT
OSC
IC1
TA7371AF
RF IN
GND
AFC
8
7
6
5
1
2
3
4
0.7
(0)
TP30
C1 100p
C3 10p
MP
80k
2k


F
G
H
I
J
K
L
M
N
O
P
C1 100p
C3 10p
Q1 2SC4627(C)
R1 1k
R2 4.7k
C2 0.01 (B)
FM LOCAL/DX SWITCH
AM LOCAL/DX SWITCH
Q25 2SC4655 (C)
R51 4.7k
R52 220
C73 0.01 (B)
Q5 AM RF AMP
R13 100k
R14 2.2k
Q5 2SC4627(C)
C16 0.047 (B)
C17 0.047 (B)
R15 100
C42 2200p (SL)
Q9 AMP
R64 47k
R63 1.5k
C79 0.01
R62 100
R61 2.2k
C80 5p
Q9 2SC4627 (C)
Q31 RADIO POWER SWITCH
Q31 UN91
L7 56μH
R28 4.7k
TP20
TP19
TP21
TP18
IC3
PLL
IC3 TC9418FN
INH
DO1
DO2
VDD
AM IN
FM IN
GND
IF IN
OUT-4
OUT-3
OUT-2
OUT-1
XIN
XOUT
VXT
DOUT
DIN
CK
CE
TEST
I/O-1
I/O-2
I/O-3
I/O-4
C48 22 4V
C49 0.022 (B)
X1 75kHz
C50 15p (CH)
C51 15p (CH)
C52 0.47 (F)
TP16
TP17
TP15
TP29
C53 0.01 (B)
C54 100p
3
TP27
TP26
TP25
TP24
Q10,11 BUFFER
R34 220k
R35 22k
R36 22k
R37 220k
IC4
EEPROM
IC4 S-29L194AD
DO
DI
SK
CS
GND
PROTECT
NC
Vcc
B+
VCC4
TP33
Q10 UN9115
Q11 UN9210
Q12 UN9210
Q13 UN9210
Q14 UN9210
Q15 UN9115
R33 22k
R38 22k
R39 22k
Q12,13 INVERTER
118

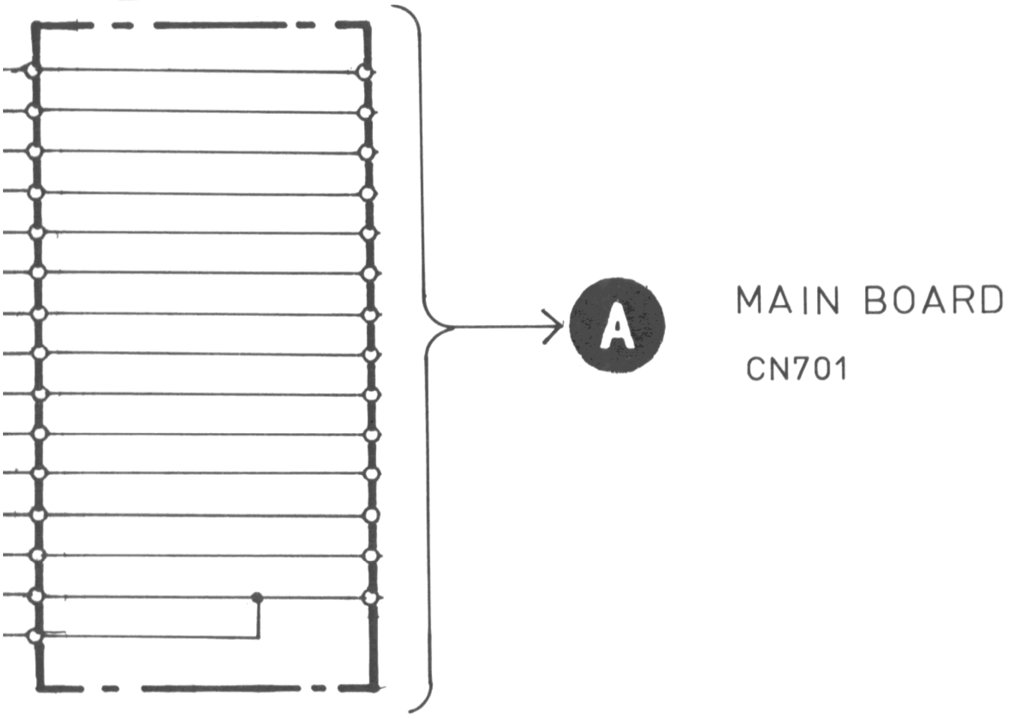

9
10
11
12
13
14
15
16
Q3
FM+B SWITCH
B+
VCO
L4
22μH
Q3
2SA1745 (6)
1.3
(0.2)
1.3
0.6
(1.3)
R11 220k
R69 2.2k
R60 220k
Q26
AM+B SWITCH
C33 330p (B)
Q26
UN9115
820P (TH)
RY1 22k
4.7k
C37 (B)
0.01
R23
0.047 (B)
C38
IC2
AM RF AMP
AM/FM IF AMP,DET
(0)1.3
1μ (F)
0
(1.3)
C35
R22 10k
0.082 (B)
C36
0.6
(0)
Q6
R9 10k
Q4
2SC4627 (C)
(0.2)
1.3
1.3
(0.2)
0.6(0)
R12 1k
FER
CF4
R10 1k
R67 100k
R68 330
R66 330
0.7
1.2
Q30
2SC4655 (C)
FM
IF
AMP
C81 0.01 (B)
C82 0.01 (B)
L5,CT1
AM TRACKING
T1
AM VT
C32
C31 1 (F)
R21 22k
C34 0.1 (B)
(0.8)
0
1.3
(0.6)
0.4
0
(1.3)
0
0
(0.7)(0)
1.2
0.6
0.5
C21 0.047 (B)
24 AM RF IN
23 IW SW
22 DET OUT
21 PILOT IN
20 MPX IN
19 LP2B
18 LP2A
17 VCO
16 LPF1
15 R OUT
14 L OUT
IC2
TA2022AFN
1 Vref
2 OSC
3 FM IF IN
4 MIX
5 Vcc
6 AM IF IN
7 QUAD
8 AGC
9 GND
10 IF OUT
11 IF REQ
T2
AM IF
0.9
1.3
0.9
1.3
1.3
1.3
1.3
0
(0.6)
1.3
1.3
JC2
7kHz (A)
C23
470p (CH)
T1
T2
R22 (B)


R14 2.2k
0.7
1.4
Q5
2SC4627 (C)
R15 100
C18 47p
FERRITE ROD ANTENNA
L5
CT1 10p
C19 4p (UJ)
D3
HVR100
C20 0.022 (B)
R16 10k
R17 10k
D4
HVR100
C22 0.022 (B)
R18 470k
C23 470p (CH)
C24 18p (CH)
T1
C25 47p
C74 0.022 (B)
CF1
R58 10k
C27 470p (UJ)
T2
C26 47 2.5V
C28 0.022 (B)
CF2 450kHz
CF3 10.7kHz (A)
C29 0.022 (B)
R19 2.2k
R20 100k
1.3
0.7
Q27
2SC4655 (C)
C30 0.022 (B)
R53 100
Q27
IF AMP
C76 0.022 (B)
R54 47k
1.3
2.6
Q31
UN9115
2.6
TP22
(VT)
R31 10k
C55
470p (B)
R29 10k
C56 0.33 (B)
R32 100k
1.2
2.6
Q7
2SC4655 (B)
0.6
L.P.F
1.6
0.6
Q8
2SC4655 (B)
L.P.F
C53 0.01 (B)
C54 100p
R30 470k
B+
R45 4.7k
R46 470
D6
MA110
T3
Q20,21,22
DDC
D5 MA8130
C57 1 16V
C58 0.022 (B)
C59 0.22 (F)
C60 0.022 (B)
C61 22 4V
C62 1 (F)
L8 100μH
C63 3.3 6.3V
D7
MA729
C64 1 (F)
1.3
Q20
2SD1048
0
C65 0.01 (B)
R47 15
R48 620
Q22
2SB815
0
Q21
2SD1328
0
0.6
L9 10μH
C66 1 (F)
C67 4.7 4V
C68 1 (F)
C69 0.022 (B)
B+
R65 820
1.5
R49 100k
1.4
0.7
Q23
2SB815 B6
DDC SWITC
Q14,15
BUFFER
R40 22k
2.6
Q16
UN9115
0
2.6
R39 22k
Q16,17
RADIO ON SWITCH
0
Q17
UN9210
1.5
R42 22k
B+
0
1.5
Q19
UN9115
1.5
1.5
0
Q18
UN9210
R41 470k
INVERTER
R44 22k
Q19
RADIO POWER SWITCH


16
17
18
19
20
21
22
C37
0.01
(B)
RY1 22k
R23
4.7k
C38
0.047
(B)
C36
0.082
(B)
0
0.6
(0)
Q6
UN9218
C39
4700p (B)
C40
4700p (B)
C41
1000p (B)
C43
1000p (B)
C44
1000p (B)
C45
1000p (B)
R24
6.8k
R26
6.8k
C46
1
(F)
R25
6.8k
R27
6.8k
C47
1
(F)
0.5
Q6
MONO/ST SWITCH
(0.7)
(0)
1.2
0.6
0.5
1.3
17
16
15
14
13
VCO
LPF1
R OUT
L OUT
TUN
TA2022AFN
AGC
GND
IF OUT
IF REQ
SP OUT
8
9
10
11
12
1.3
1.3
R59 2.7k
TP23 (ST)
Q28
IF SWITCH
Q28
UN9115
R22
(B)
1.3
1.3


Q28
UN9115
1.3
1.3
0
0.122 (B)
C76
B+
VCC2
R54
47k
0.1 (B)
C77
C75
3.3
6.3V
0
0
Q29
AGC SWITCH
Q29
UN9218
27
AMP
IC5
RIPPLE FILTER
TP2
TP3
TP1
TP12
TP11
TP4
ANT
2.5V
1.5V
TU FLEXIBLE BOARD
B+
R65 820
1.3
Q24
2SB1295
1.5
B+
Q24
RIPPLE
FILTER
C78
100p (SL)
0.8
0.8
1.3
1.5
1.5
RF OUT
COMP
BASE
Vcc
PW SW
IC5
TA2015FN
IN1
IN2
GND
RF IN
MODE SW
1.3
1.5
C71
4.7
4V
C72
47
2.5V
TP14
JC1
TP32
R49
100k
1.5
0.7
Q23
2SB815
B6
DC SWITCH
TP6
TP7
TP5
TP10
TP13
TP8
TP9

[TU FLEXIBLE BOARD]

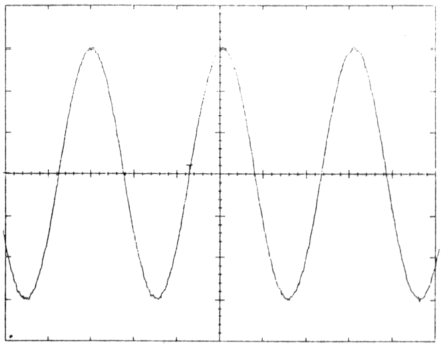


Note:

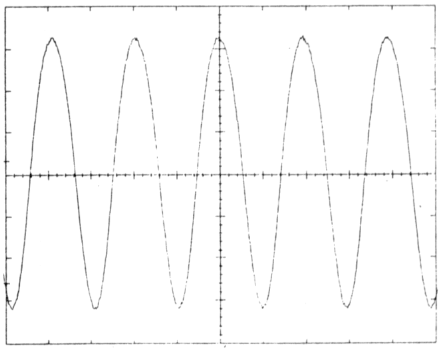
- All capacitors are in µF unless otherwise noted. pF:µµF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- **B+** : B+ Line
- ▭ : adjustment for repair.
- no mark : FM
  - ( ) : AM
  - * : can not be measured.
  - ※ : Printed inductor.
- Voltages are taken with a VOM (Input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  - ⇨ : FM
  - ➡ : AM

• Waveforms

① 32.768kHz 1.2Vp-p



② 51.5kHz 0.7Vp-p



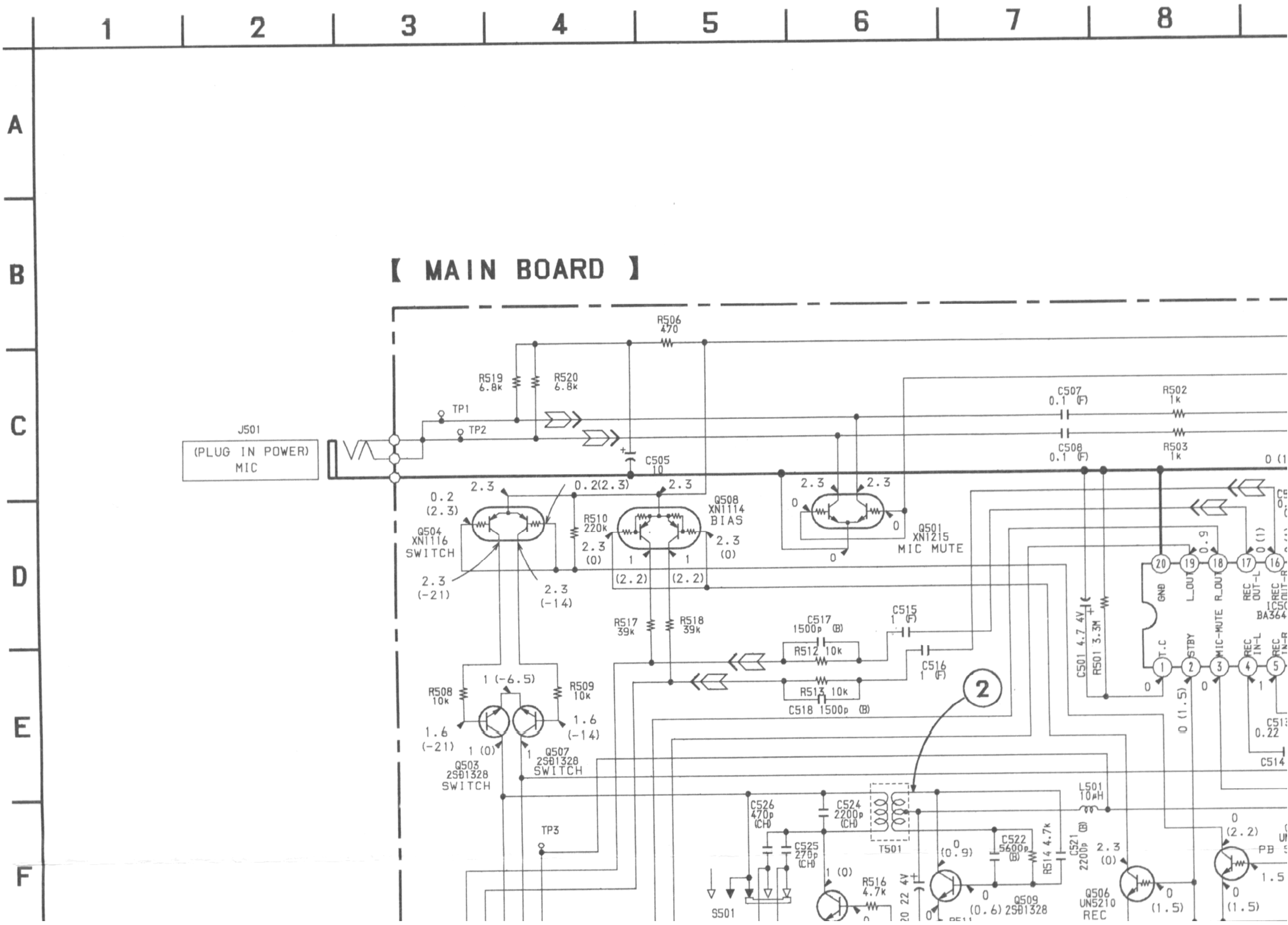
Note:

- All capacitors are in μF unless otherwise noted. pF:μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- % : indicates tolerance.
- $\boxed{\text{B+}}$: B+ Line
- ☐ : adjustment for repair.
- Total current is measured with no cassette installed.
- Power voltage is dc 1.5V and fed with regulated dc power supply from external power voltage jack.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
  no mark : PLAY
  ( ) : REC
- Voltages are taken with a VOM (Input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope.
  Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ⇨ : FM
  ▷ : PB
  ▷▷ : REC

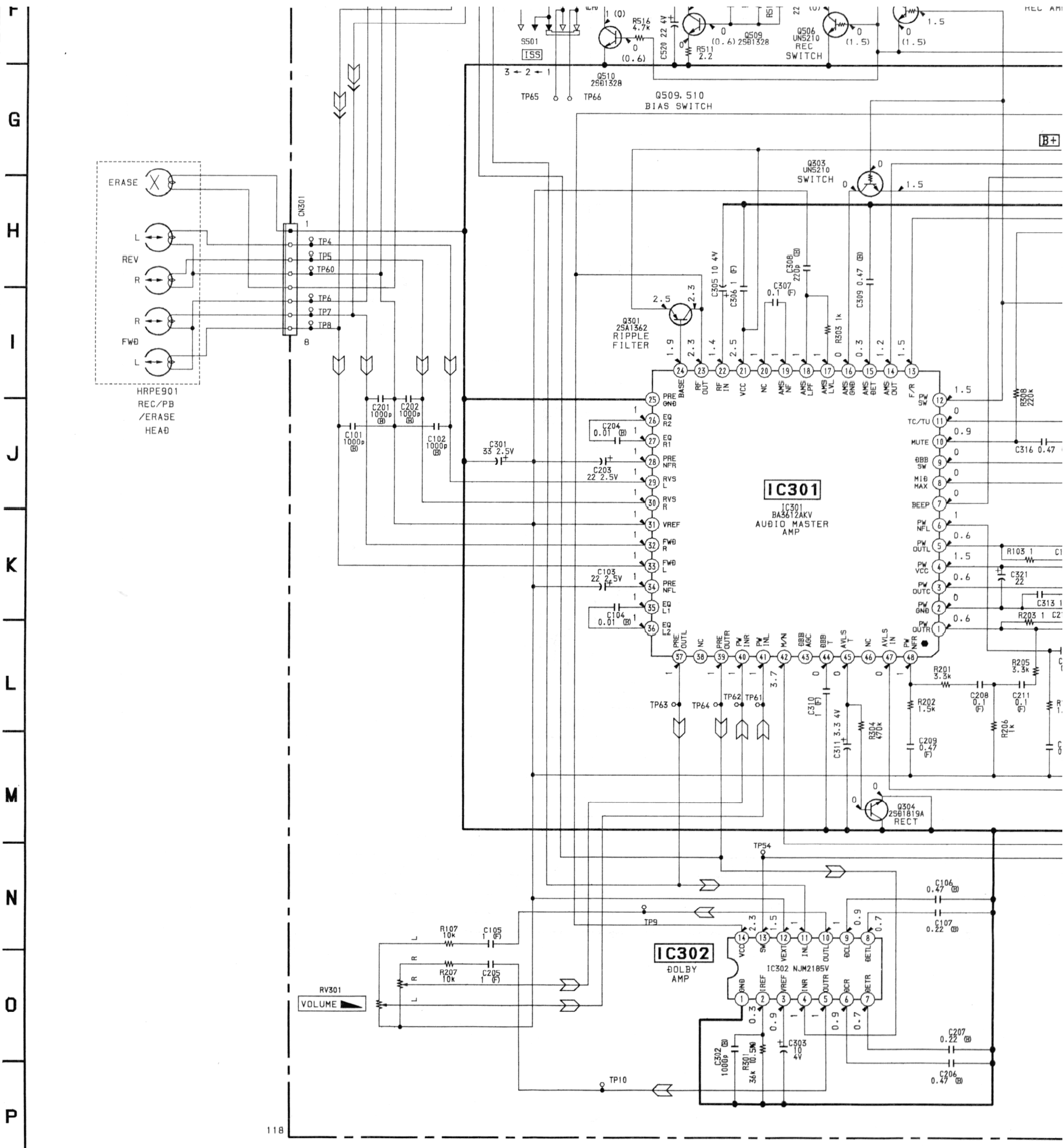
F
G
H
I
J
K
L
M
N
O
P
Q

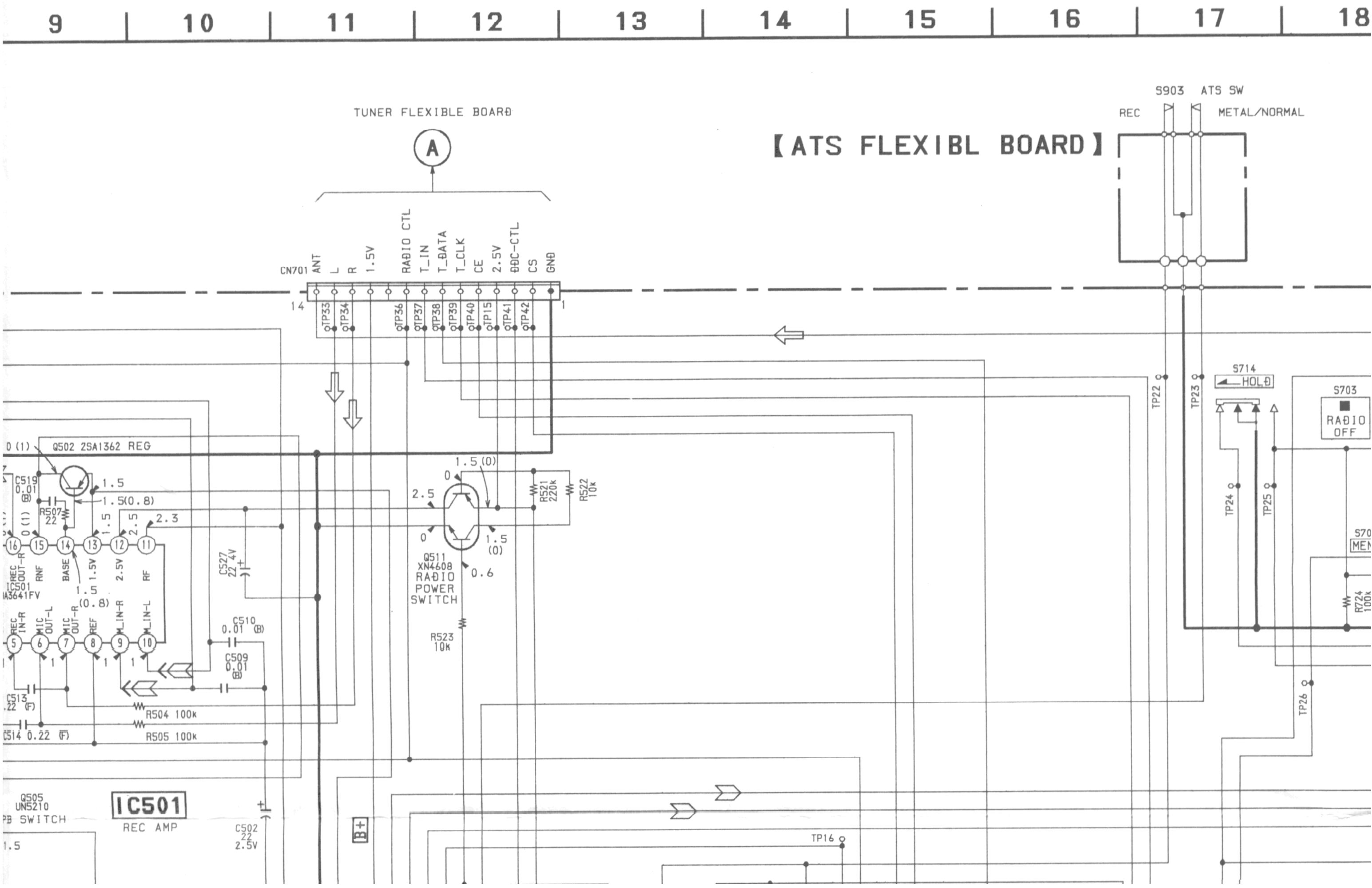
6-4. SCHEMATIC DIAGRAM — MAIN SECTION —

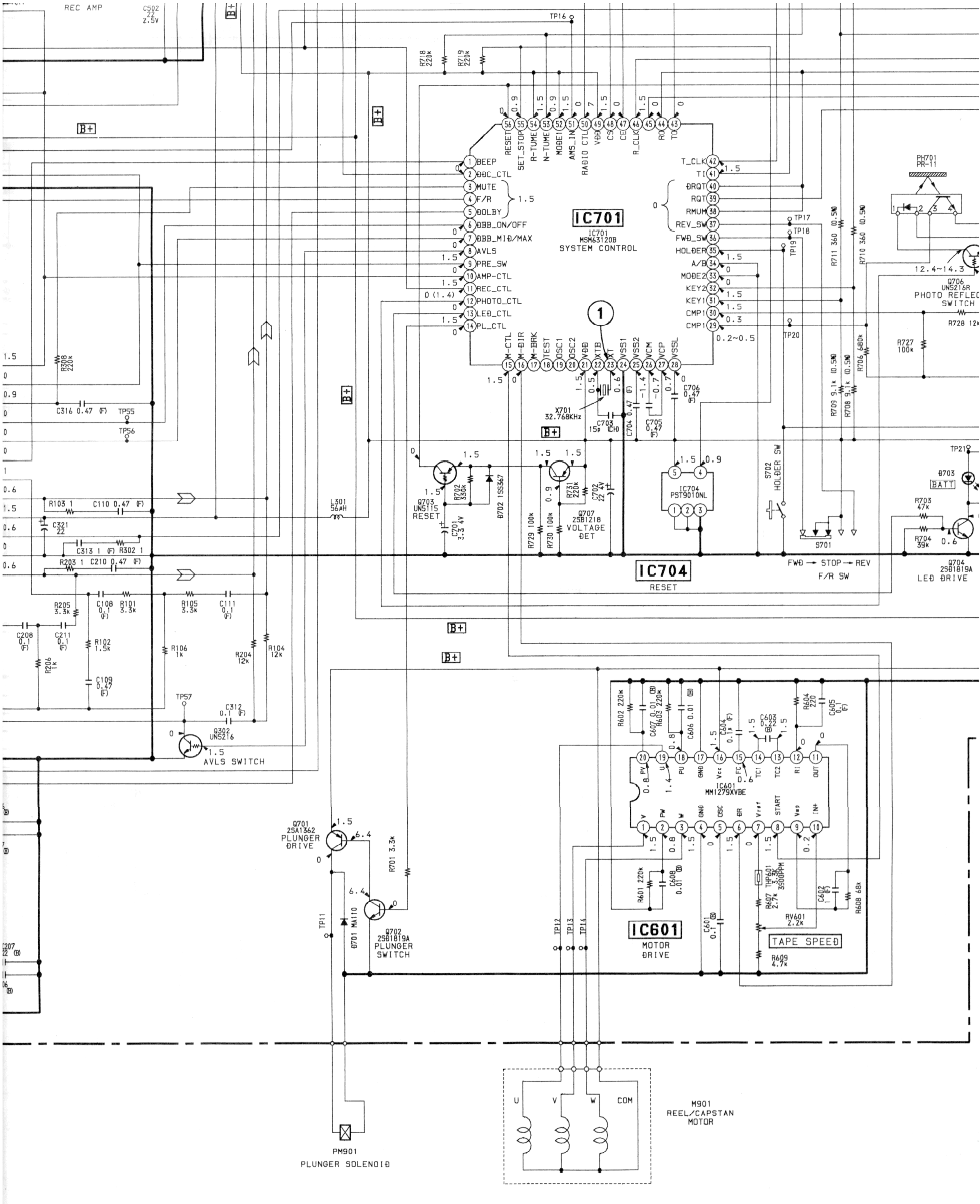
- See page 11 for IC Pin Function. (IC501, IC701, IC702)
- See page 29 for IC Block Diagrams.

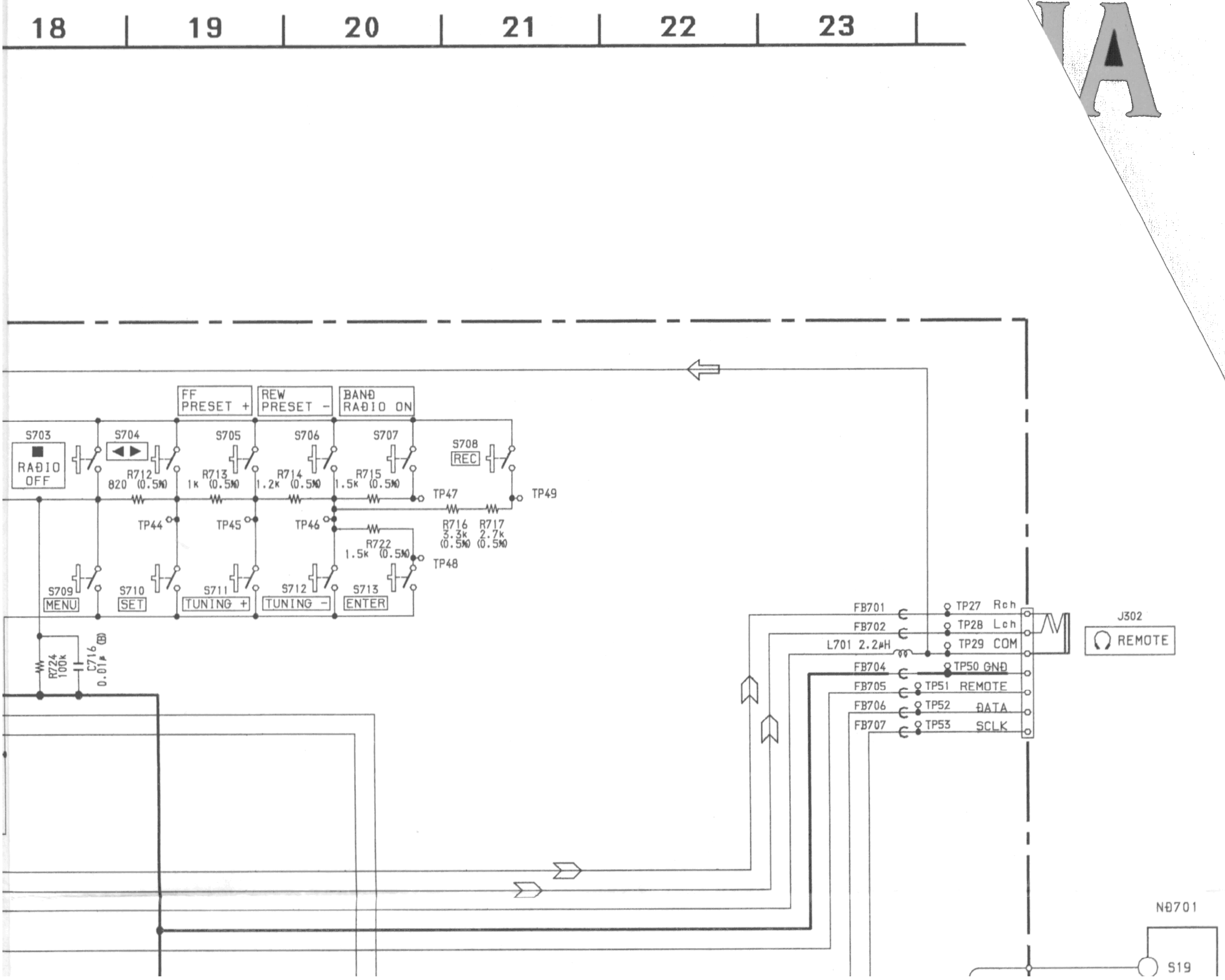


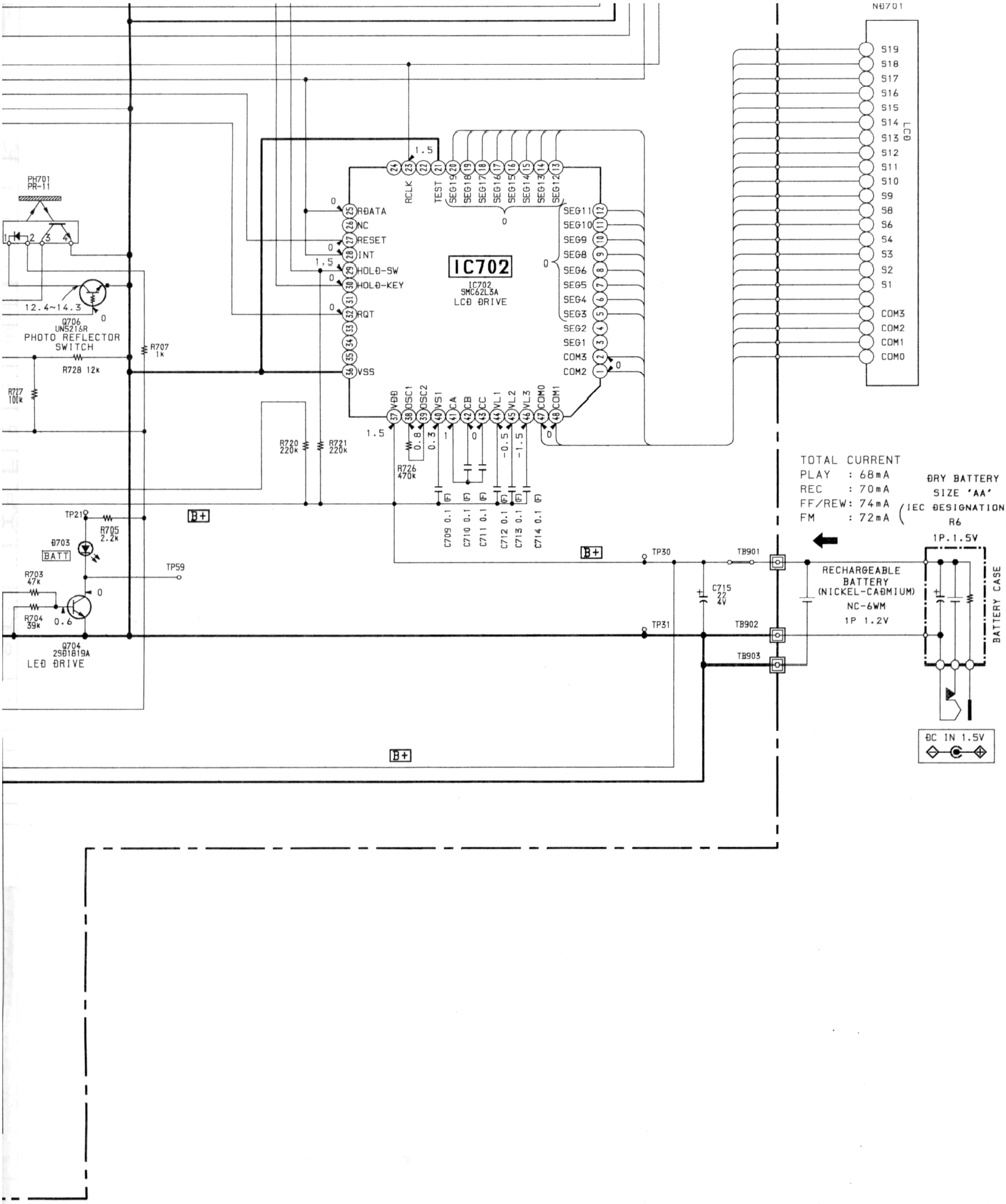
1
2
3
4
5
6
7
8
A
B
C
D
E
F
【 MAIN BOARD 】
J501
(PLUG IN POWER) MIC
TP1
TP2
TP3
R506 470
R519 6.8k
R520 6.8k
C505 10
C507 0.1 (F)
C508 0.1 (F)
R502 1k
R503 1k
Q504 XN1116 SWITCH
Q508 XN1114 BIAS
Q501 XN1215 MIC MUTE
R510 220k
R517 39k
R518 39k
C517 1500p (B)
R512 10k
R513 10k
C518 1500p (B)
C515 1 (F)
C516 1 (F)
R508 10k
R509 10k
Q503 2SD1328 SWITCH
Q507 2SD1328 SWITCH
C501 4.7 4V
R501 3.3M
GND
L OUT
R OUT
REC OUT-L
REC OUT-R
T.C
STBY
MIC-MUTE
REC IN-L
REC IN-R
IC501
BA364
C526 470p (CH)
C524 2200p (CH)
C525 270p (CH)
T501
C522 5600p (B)
R514 4.7k
C521 2200p (B)
L501 10μH
R516 4.7k
Q509 2SD1328
Q506 UN5210 REC
S501
PB
②
2.3
0.2(2.3)
0.2 (2.3)
2.3 (-21)
2.3 (-14)
2.3 (0)
(2.2)
1 (-6.5)
1.6 (-21)
1.6 (-14)
1 (0)
0 (0.9)
(0.6)
0 (1.5)
(2.2)
(1.5)


F
G
H
I
J
K
L
M
N
O
P
Q
S501
ISS
3 ← 2 ← 1
TP65
TP66
Q510
2SB1328
R516
4.7k
C520 22 4V
R511
2.2
Q509
2SB1328
Q509, 510
BIAS SWITCH
Q506
UN5210
REC
SWITCH
REC AMP
B+
Q303
UN5210
SWITCH
ERASE
REV
FWD
HRPE901
REC/PB
/ERASE
HEAD
CN301
TP4
TP5
TP60
TP6
TP7
TP8
C201
1000p
C202
1000p
C101
1000p
C102
1000p
C301
33 2.5V
C203
22 2.5V
C204
0.01
C103
22 2.5V
C104
0.01
Q301
2SA1362
RIPPLE
FILTER
C305 10 4V
C306 1
C307
0.1
C308
220p
R303 1k
C309 0.47
R308
220k
C316 0.47
IC301
IC301
BA3612AKV
AUDIO MASTER
AMP
PRE GND
EQ R2
EQ R1
PRE NFR
RVS L
RVS R
VREF
FWD R
FWD L
PRE NFL
EQ L1
EQ L2
BASE
RF OUT
RF IN
VCC
NC
AMS NF
AMS LPF
AMS LVL
AMS GND
AMS DET
AMS OUT
F/R
PW SW
TC/TU
MUTE
DBB SW
MID MAX
BEEP
PW NFL
PW OUTL
PW VCC
PW OUTC
PW GND
PW OUTR
PRE OUTL
PRE OUTR
PW INR
PW INL
M/N
DBB AGC
DBB T
AVLS T
AVLS IN
PW NFR
R103 1
C321
22
C313
R203 1
R201
3.3k
R205
3.3k
C208
0.1
C211
0.1
R202
1.5k
R206
1k
C209
0.47
C310
1
C311 3.3 4V
R304
470k
TP63
TP64
TP62
TP61
Q304
2SB1819A
RECT
TP54
TP9
TP10
C106
0.47
C107
0.22
IC302
DOLBY
AMP
IC302 NJM2185V
VCC
SW
VEXT
INL
OUTL
DCL
DETL
GND
IREF
VREF
INR
OUTR
DCR
DETR
R107
10k
C105
1
R207
10k
C205
1
RV301
VOLUME
C302
1000p
R301
36k
C303
10
4V
C207
0.22
C206
0.47
118


9
10
11
12
13
14
15
16
17
18
TUNER FLEXIBLE BOARD
A
【ATS FLEXIBL BOARD】
S903 ATS SW
REC
METAL/NORMAL
CN701
ANT
L
R
1.5V
RADIO CTL
T_IN
T_DATA
T_CLK
CE
2.5V
DDC-CTL
CS
GND
14
1
TP33
TP34
TP36
TP37
TP38
TP39
TP40
TP15
TP41
TP42
TP22
TP23
S714
HOLD
S703
RADIO OFF
TP24
TP25
S70
MEN
R724 100k
TP26
0 (1)
Q502 2SA1362 REG
C519 0.01 (B)
R507 22
1.5
1.5(0.8)
0 (1)
1.5
2.5
2.3
16
15
14
13
12
11
REC OUT-R
RNF
BASE
1.5V
2.5V
RF
IC501
AN3641FV
1.5 (0.8)
REC IN-R
MIC OUT-L
MIC OUT-R
REF
M_LIN-R
M_LIN-L
5
6
7
8
9
10
1
1
1
1
C527 22 4V
C510 0.01 (B)
C509 0.01 (B)
C513 .22 (F)
C514 0.22 (F)
R504 100k
R505 100k
Q505 UN5210
PB SWITCH
1.5
IC501
REC AMP
C502 22 2.5V
B+
1.5 (0)
0
2.5
0
1.5 (0)
0.6
Q511 XN4608
RADIO POWER SWITCH
R521 220k
R522 10k
R523 10k
TP16

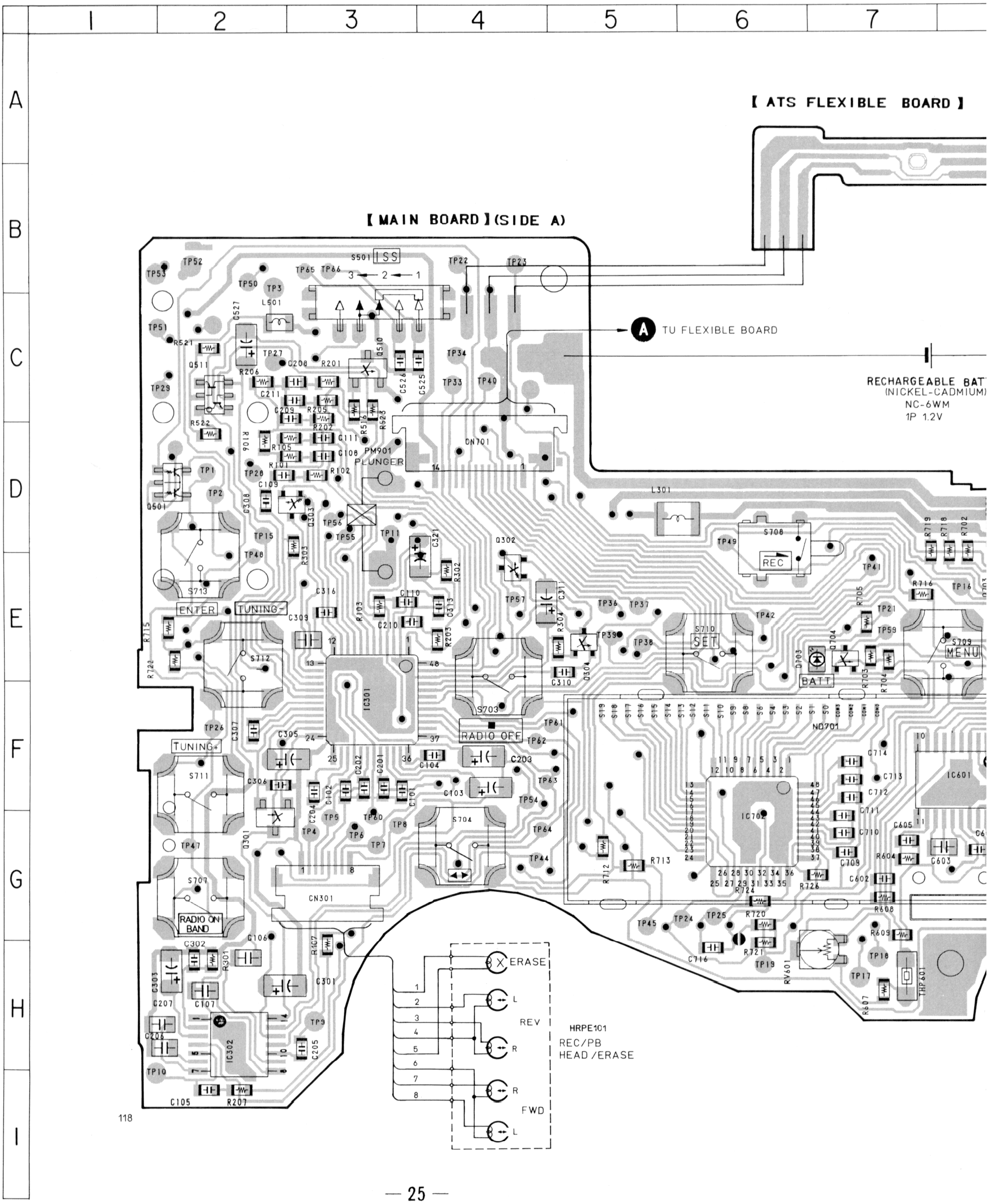

REC AMP
C502 22 2.5V
TP16
R718 220k
R719 220k
IC701
IC701 MSM63120B
SYSTEM CONTROL
RESET
SET_STOP
R-TUME
N-TUME
MODE1
AMS_IN
RADIO CTL
VDD
CS
CE
R_CLK
RO
TO
BEEP
DDC_CTL
MUTE
F/R
DOLBY
DBB_ON/OFF
DBB_MID/MAX
AVLS
PRE_SW
AMP-CTL
REC_CTL
PHOTO_CTL
LED_CTL
PL_CTL
T_CLK
TI
DRQT
RQT
RMUM
REV_SW
FWD_SW
HOLDER
A/B
MODE2
KEY2
KEY1
CMP1
CMP1
M-CTL
M-DIR
M-BRK
TEST
OSC1
OSC2
VDD
XTB
XT
VSS1
VSS2
VCM
VCP
VSSL
TP17
TP18
TP19
TP20
TP21
PH701 PR-11
Q706 UN5216R
PHOTO REFLEC SWITCH
12.4~14.3
R728 12k
R727 100k
R711 360 (0.5W)
R710 360 (0.5W)
R709 9.1k (0.5W)
R708 9.1k (0.5W)
R706 680k
X701 32.768KHz
C703 15p CH
C704 0.47
C705 0.47 (F)
C706 0.47 (F)
Q703 UN5115 RESET
R702 330k
D702 1SS367
C701 3.3 4V
Q707 2SB1218 VOLTAGE DET
R731 220k
C702 22 4V
R729 100k
R730 100k
L301 56μH
IC704 PST9010NL
IC704
RESET
S702 HOLDER SW
S701
FWD → STOP → REV
F/R SW
D703 BATT
R703 47k
R704 39k
Q704 2SB1819A
LED DRIVE
R308 220k
C316 0.47 (F)
TP55
TP56
R103 1
C110 0.47 (F)
C321 22
C313 1 (F)
R302 1
R203 1
C210 0.47 (F)
R205 3.3k
C108 0.1 (F)
R101 3.3k
R105 3.3k
C111 0.1 (F)
C208 0.1 (F)
C211 0.1 (F)
R102 1.5k
R106 1k
R204 12k
R104 12k
R206 1k
C109 0.47 (F)
TP57
C312 0.1 (F)
Q302 UN5216
AVLS SWITCH
C207 22
B+
IC601 MM1279XVBE
IC601
MOTOR DRIVE
R602 220k
C607 0.01 (B)
R603 220k
C606 0.01 (B)
C604 0.1μ (F)
C603 0.22 (B)
R604 220
C605 0.1 (F)
PV
U
PU
GND
Vcc
FC
TC1
TC2
RI
OUT
V
PW
GND
OSC
BR
Vref
START
Vss
IN+
R601 220k
C608 0.01 (B)
C601 0.1 (B)
R607 2.7k
THP601 3.3k 3900PPM
C602 1 (F)
R608 68k
RV601 2.2k
TAPE SPEED
R609 4.7k
TP12
TP13
TP14
Q701 2SA1362 PLUNGER DRIVE
R701 3.3k
Q702 2SB1819A PLUNGER SWITCH
D701 MA110
TP11
U
V
W
COM
M901 REEL/CAPSTAN MOTOR
PM901
PLUNGER SOLENOID


18
19
20
21
22
23
S703
RADIO OFF
S704
S705
S706
S707
S708
REC
FF PRESET +
REW PRESET -
BAND RADIO ON
R712 820 (0.5W)
R713 1k (0.5W)
R714 1.2k (0.5W)
R715 1.5k (0.5W)
TP44
TP45
TP46
TP47
TP48
TP49
R716 3.3k (0.5W)
R717 2.7k (0.5W)
R722 1.5k (0.5W)
S709
MENU
S710
SET
S711
TUNING +
S712
TUNING -
S713
ENTER
R724 100k
C716 0.01μ
FB701
FB702
L701 2.2μH
FB704
FB705
FB706
FB707
TP27 Rch
TP28 Lch
TP29 COM
TP50 GND
TP51 REMOTE
TP52 DATA
TP53 SCLK
J302
REMOTE
ND701
S19

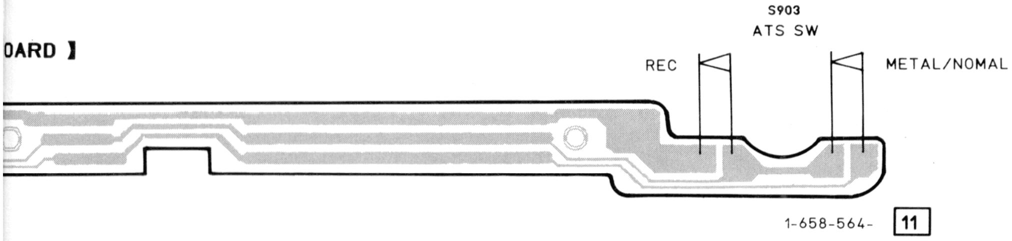


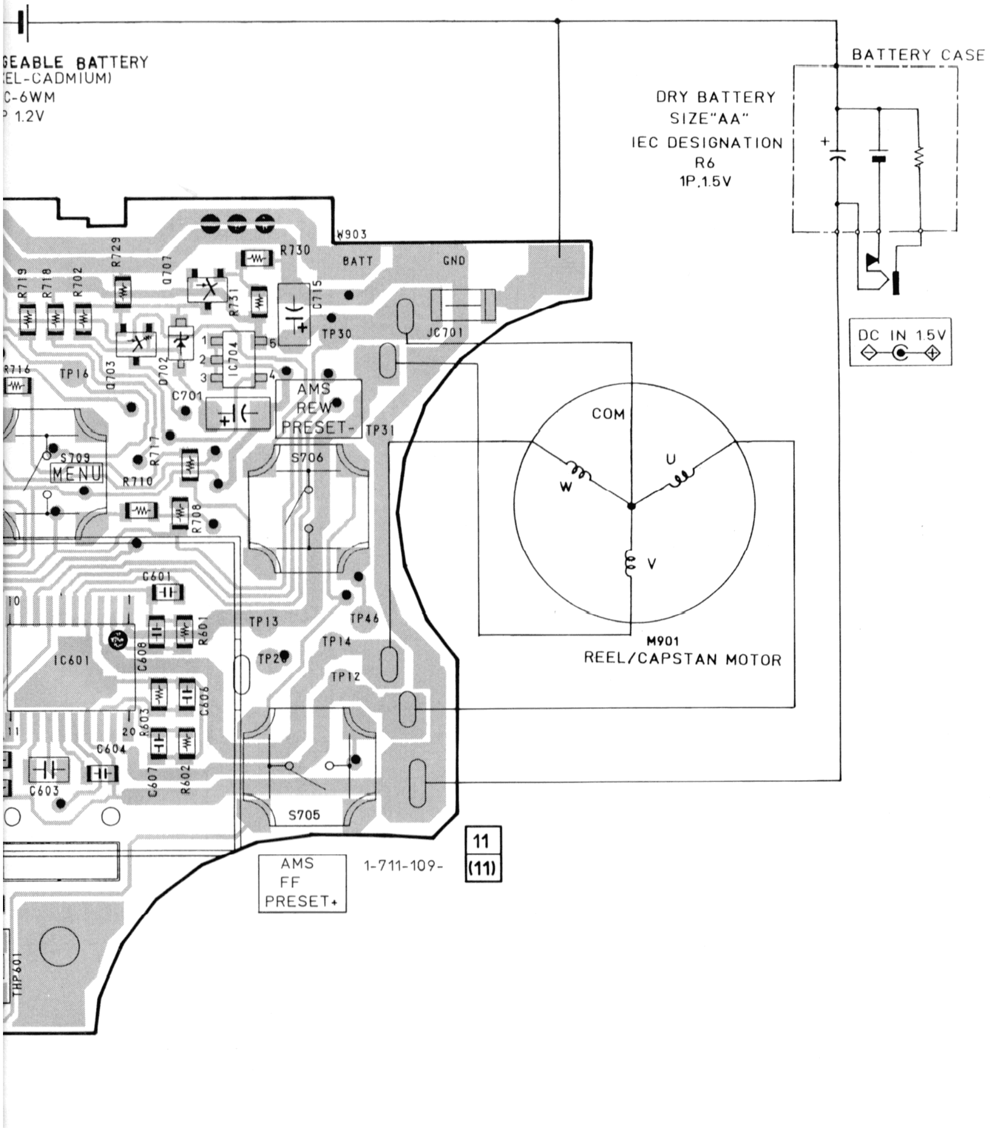
ND701
LCD
S19
S18
S17
S16
S15
S14
S13
S12
S11
S10
S9
S8
S6
S4
S3
S2
S1
COM3
COM2
COM1
COM0
IC702
IC702
SMC62L3A
LCD DRIVE
RCLK
TEST
SEG19
SEG18
SEG17
SEG16
SEG15
SEG14
SEG13
SEG12
SEG11
SEG10
SEG9
SEG8
SEG6
SEG5
SEG4
SEG3
SEG2
SEG1
COM3
COM2
RDATA
NC
RESET
INT
HOLD-SW
HOLD-KEY
RQT
VSS
VDD
OSC1
OSC2
VS1
CA
CB
CC
VL1
VL2
VL3
COM0
COM1
1.5
0
-0.5
-1.5
0.8
0.3
1
R726
470k
R720
220k
R721
220k
C709 0.1
C710 0.1
C711 0.1
C712 0.1
C713 0.1
C714 0.1
PH701
PR-11
12.4~14.3
Q706
UN5216R
PHOTO REFLECTOR
SWITCH
R707
1k
R728 12k
R727
100k
TP21
R705
2.2k
D703
BATT
R703
47k
R704
39k
0.6
Q704
2SD1819A
LED DRIVE
TP59
B+
TP30
TP31
TB901
TB902
TB903
C715
22
4V
TOTAL CURRENT
PLAY : 68mA
REC : 70mA
FF/REW: 74mA
FM : 72mA
DRY BATTERY
SIZE 'AA'
(IEC DESIGNATION R6)
1P.1.5V
RECHARGEABLE
BATTERY
(NICKEL-CADMIUM)
NC-6WM
1P 1.2V
BATTERY CASE
DC IN 1.5V
C
D
E
F
G
H
I

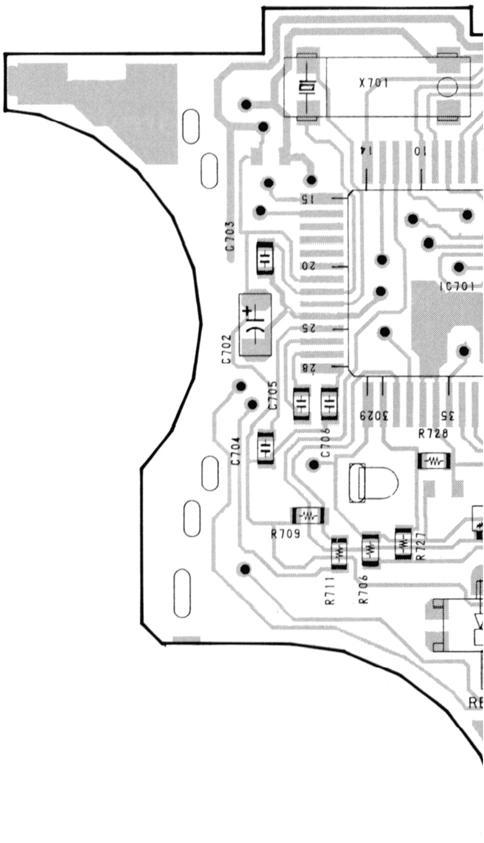
6-5. PRINTED WIRING BOARD — MAIN SECTION —


1
2
3
4
5
6
7
A
B
C
D
E
F
G
H
I
【 ATS FLEXIBLE BOARD 】
【MAIN BOARD】(SIDE A)
A TU FLEXIBLE BOARD
RECHARGEABLE BATT
(NICKEL-CADMIUM)
NC-6WM
1P 1.2V
S501 ISS
TP65 TP66
3 2 1
TP22
TP23
TP52
TP53
TP50
TP3
L501
C527
TP51
R521
TP27
C208
R201
Q510
C526
C525
TP34
TP33
TP40
Q511
R206
C211
TP29
C209
R205
R202
R516
R523
CN701
14
1
R522
R106
R105
C111
C108
PM901
PLUNGER
R101
R102
TP1
TP28
C109
TP2
Q501
C308
Q303
TP56
TP55
TP11
C321
Q302
L301
S708
REC
TP49
TP41
R719
R718
R702
TP15
TP48
R303
R302
S713
ENTER
TUNING–
C316
C110
C313
R103
C210
C309
R203
TP57
C311
TP36
TP37
R304
TP39
TP38
S710
SET
TP42
D703
Q704
BATT
R705
R716
TP16
TP21
TP59
S709
MENU
R703
R704
R715
R722
S712
12
13
48
1
IC301
S703
C310
Q304
RADIO OFF
24
25
36
37
TP61
TP62
ND701
TP26
C307
C305
C104
C203
TUNING+
S711
C306
C204
C102
C202
C201
C101
C103
TP63
TP54
TP5
TP60
TP4
TP6
TP8
TP7
S704
TP64
TP44
Q301
TP47
S707
RADIO ON
BAND
CN301
1
8
C106
C302
R301
R107
C303
C207
C107
C301
IC302
C206
TP9
C205
TP10
C105
R207
118
IC702
R712
R713
R724
R726
TP45
TP24
TP25
R720
R721
TP19
C716
RV601
C714
C713
C712
C711
C710
C709
C605
C603
R604
C602
R608
R609
IC601
TP18
TP17
THP601
R607
1
2
3
4
5
6
7
8
ERASE
L
REV
R
R
FWD
L
HRPE101
REC/PB
HEAD /ERASE

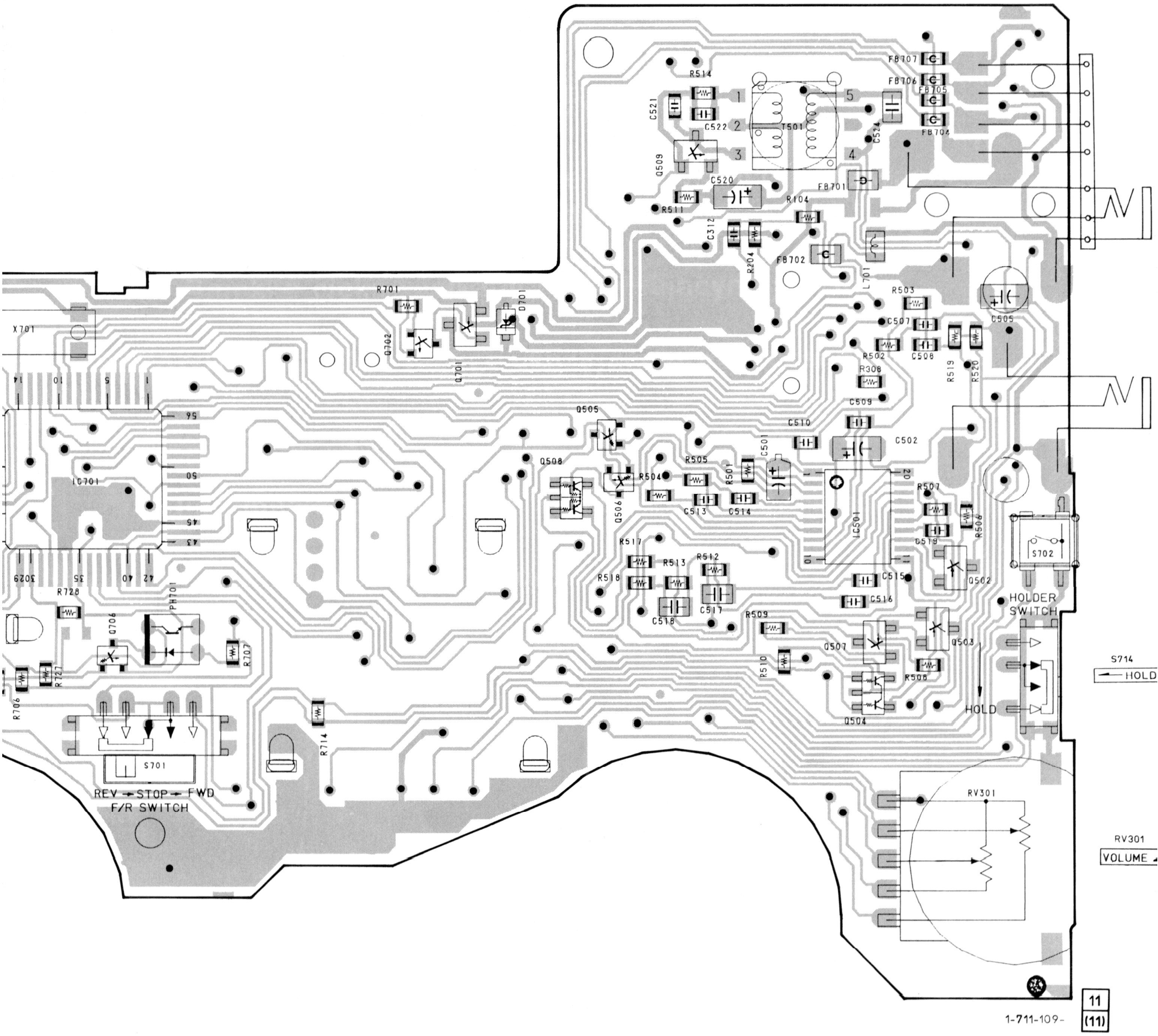
8	9	10	11	12	13	14	15

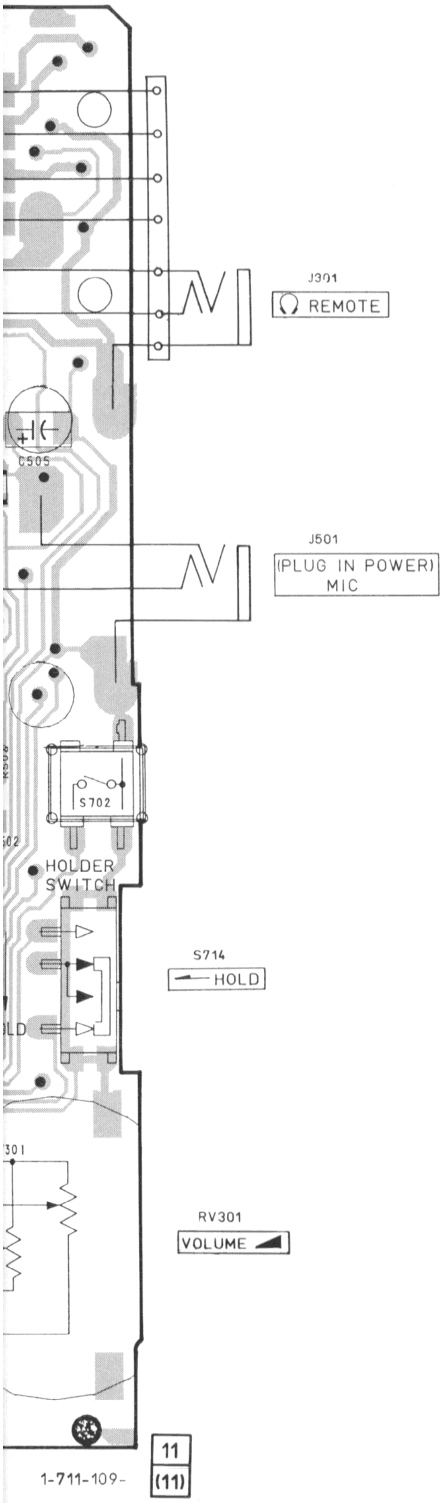

OARD 】
S903
ATS SW
REC
METAL/NOMAL
1-658-564-
11


EABLE BATTERY
EL-CADMIUM)
C-6WM
P 1.2V
BATTERY CASE
DRY BATTERY
SIZE"AA"
IEC DESIGNATION
R6
1P,1.5V
DC IN 1.5V
W903
BATT
GND
R730
R719
R718
R702
R729
Q707
R731
C715
TP30
JC701
IC704
D702
Q703
TP16
R716
C701
AMS
REW
PRESET-
TP31
S709
MENU
R710
R717
R708
S706
COM
W
U
V
M901
REEL/CAPSTAN MOTOR
C601
R601
IC601
C608
TP13
TP2
TP46
TP14
TP12
R603
C606
C604
C607
R602
C603
S705
11
(11)
AMS
FF
PRESET+
1-711-109-
THP601


X701
IC701
C703
C702
C705
C704
C706
R728
R709
R711
R706
R727
RE

【MAIN BOARD】(SIDE B)


R514
C521
C522
T501
1
2
3
4
5
C524
FB707
FB706
FB705
FB704
Q509
C520
R511
R104
FB701
C312
R204
FB702
L701
R701
D701
Q702
Q701
X701
14
10
5
1
56
50
45
43
IC701
3029
35
40
42
R503
C507
C505
R502
C508
R519
R520
R308
C509
C510
C502
Q505
Q508
R505
R501
C501
R504
Q506
C513
C514
IC501
20
10
11
R507
R506
C519
S702
Q502
R517
R513
R512
R518
C515
C516
C518
C517
R509
Q503
Q507
HOLDER SWITCH
R510
R508
Q504
HOLD
S714
HOLD
R728
PH701
Q706
R707
R727
R706
R714
S701
REV ← STOP → FWD
F/R SWITCH
RV301
RV301
VOLUME
11
(11)
1-711-109-


21
22
23
J301
REMOTE
C505
J501
(PLUG IN POWER)
MIC
S702
HOLDER SWITCH
S714
HOLD
RV301
VOLUME
11
(11)
1-711-109-

- **Semiconductor Location**

Ref. No.	Location
D701	D-18
D702	E-8
D703	E-7
IC301	F-3
IC302	H-2
IC501	E-20
IC601	F-8
IC701	E-15
IC702	G-6
IC704	E-9
Q301	G-2
Q302	E-4
Q303	D-3
Q304	E-5
Q501	D-2
Q502	F-21
Q503	F-21
Q504	G-20
Q505	E-18
Q506	E-19
Q507	F-20
Q508	E-18
Q509	C-19
Q510	C-3
Q511	C-2
Q701	D-18
Q702	D-17
Q703	E-8
Q704	E-7
Q706	F-15
Q707	D-8

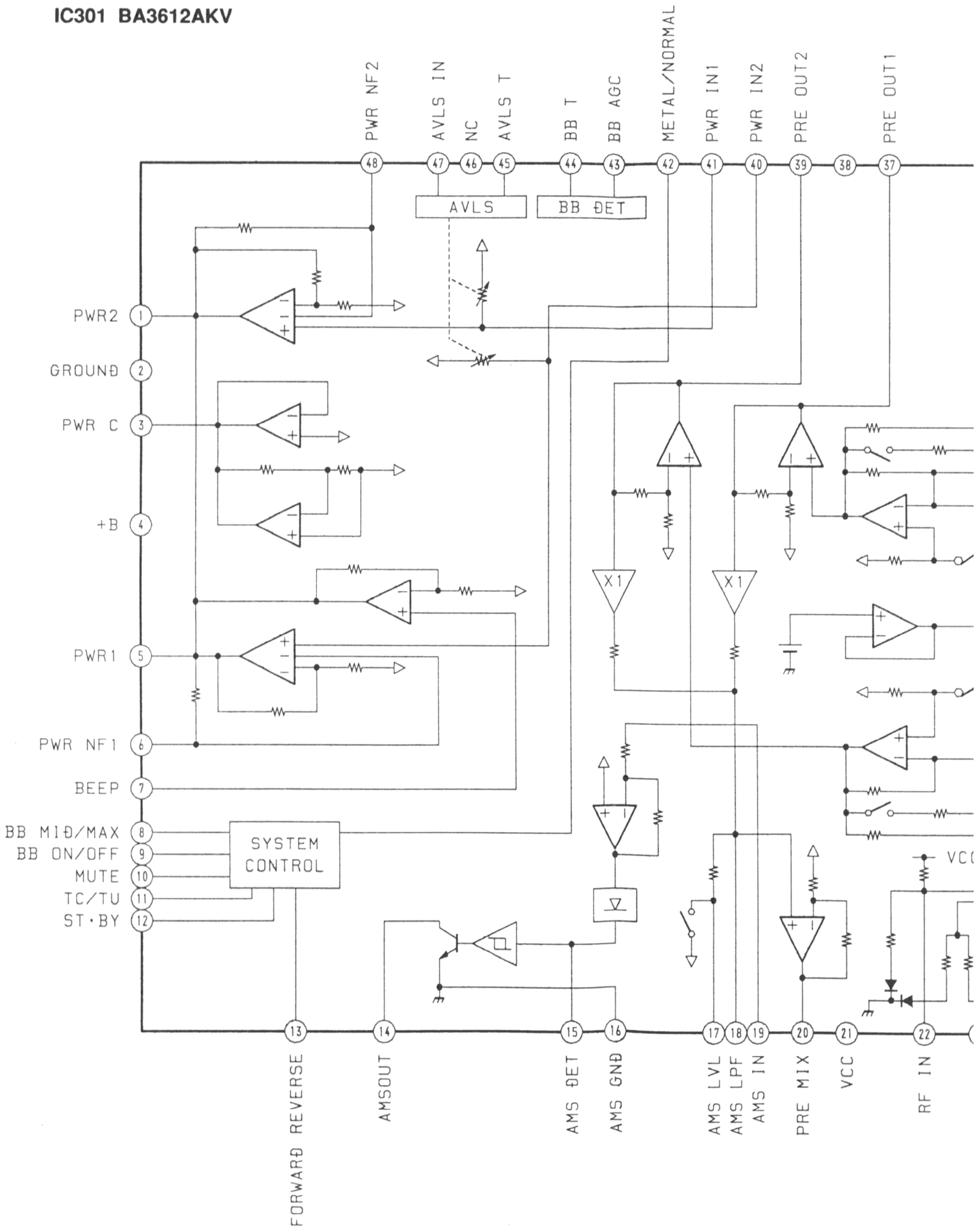
Note:

- ● : Through hole.
- ▨ : Pattern from the side which enable seeing.
  (The other layer's patterns are not indicated.)

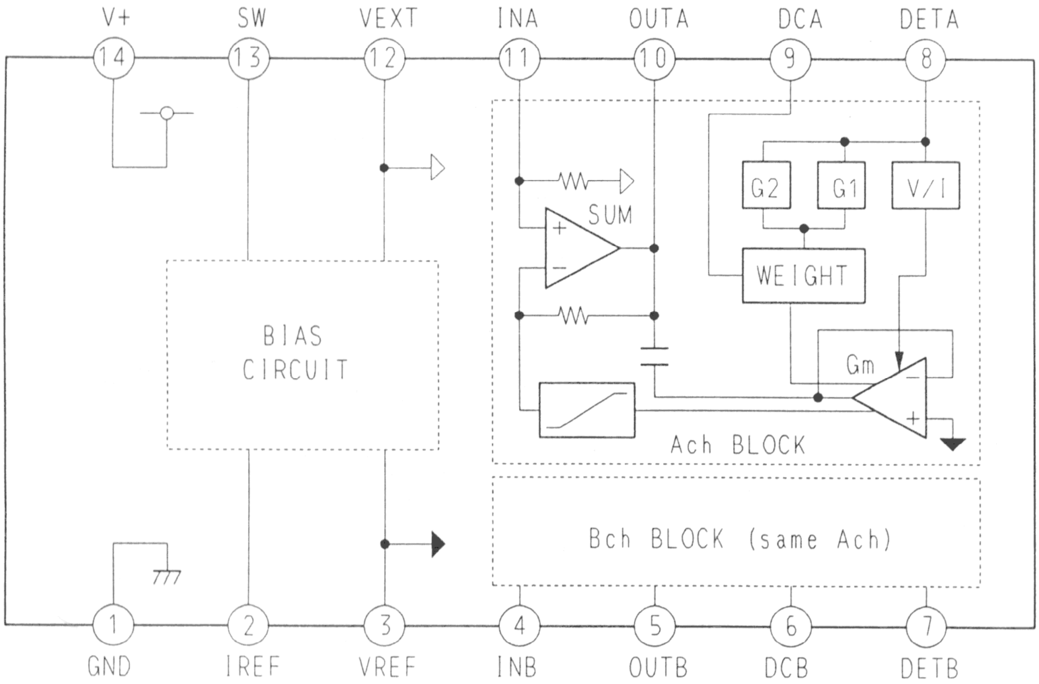
6-6. IC BLOCK DIAGRAMS

— MAIN SECTION —

IC301 BA3612AKV


PWR NF2
AVLS IN
NC
AVLS T
BB T
BB AGC
METAL/NORMAL
PWR IN1
PWR IN2
PRE OUT2
PRE OUT1
48
47
46
45
44
43
42
41
40
39
38
37
AVLS
BB DET
PWR2 1
GROUND 2
PWR C 3
+B 4
PWR1 5
PWR NF1 6
BEEP 7
BB MID/MAX 8
BB ON/OFF 9
MUTE 10
TC/TU 11
ST·BY 12
SYSTEM CONTROL
X1
X1
VC
13
14
15
16
17
18
19
20
21
22
FORWARD REVERSE
AMSOUT
AMS DET
AMS GND
AMS LVL
AMS LPF
AMS IN
PRE MIX
VCC
RF IN

IC302 NJM2185V-TE2


V+
SW
VEXT
INA
OUTA
DCA
DETA
14
13
12
11
10
9
8
G2
G1
V/I
SUM
WEIGHT
BIAS
CIRCUIT
Gm
Ach BLOCK
Bch BLOCK (same Ach)
1
2
3
4
5
6
7
GND
IREF
VREF
INB
OUTB
DCB
DETB

Q12

Q11

F1

1

2

REF

2

1

F2

Q21

Q22

RE GND

V

PW

W

GND

OSC

DR

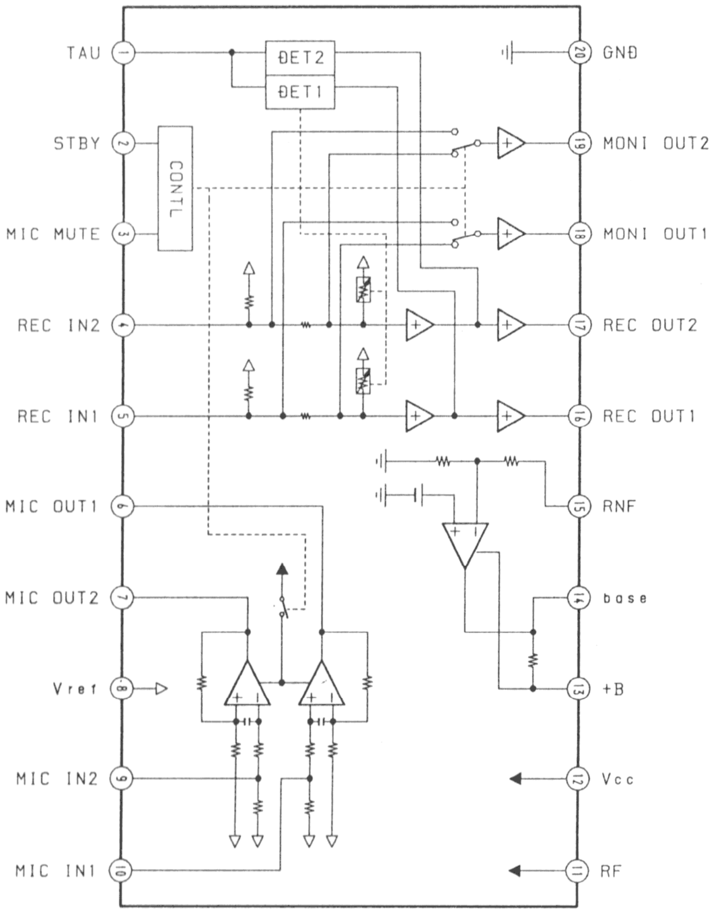
VREF

START

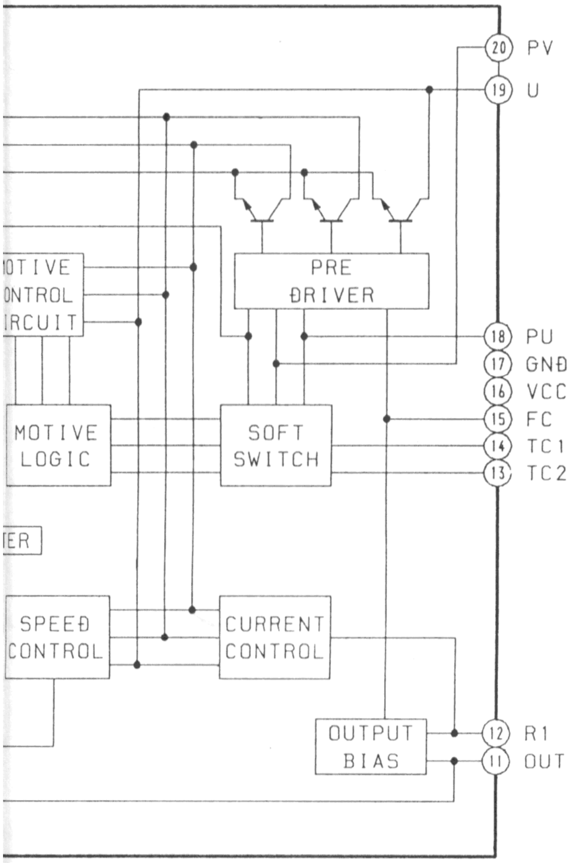
VSP (

IN+ (

IC501 BA3641FV-E2

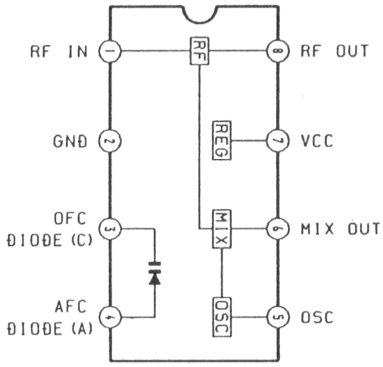

TAU
1
DET2
DET1
20
GND
STBY
2
CONTL
19
MONI OUT2
MIC MUTE
3
18
MONI OUT1
REC IN2
4
17
REC OUT2
REC IN1
5
16
REC OUT1
MIC OUT1
6
15
RNF
MIC OUT2
7
14
base
Vref
8
13
+B
MIC IN2
9
12
Vcc
MIC IN1
10
11
RF

BE

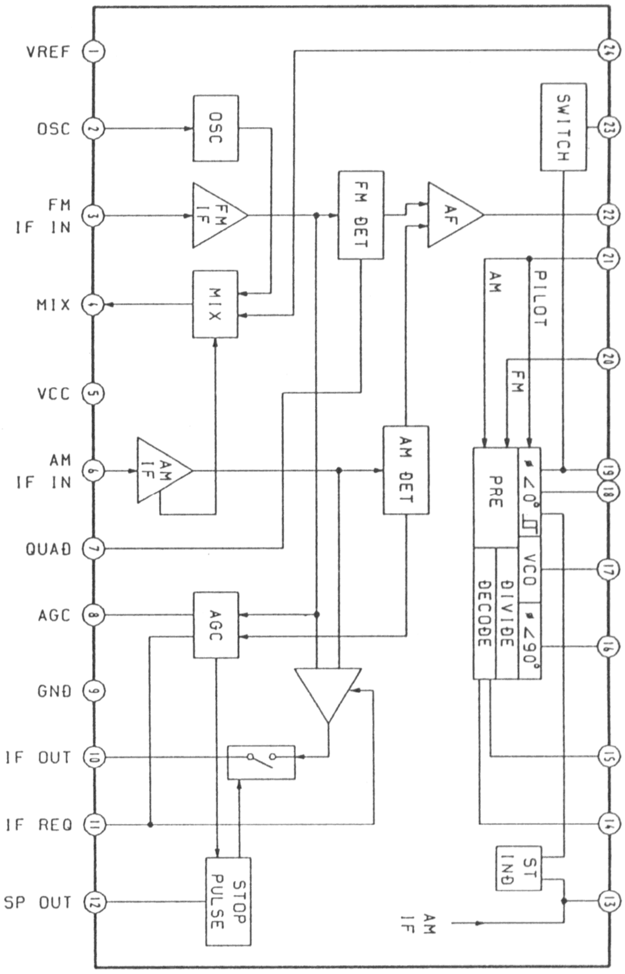

20 PV
19 U
OTIVE
ONTROL
IRCUIT
PRE DRIVER
18 PU
17 GND
16 VCC
MOTIVE LOGIC
SOFT SWITCH
15 FC
14 TC1
13 TC2
ER
SPEED CONTROL
CURRENT CONTROL
OUTPUT BIAS
12 R1
11 OUT

— TUNER SECTION —

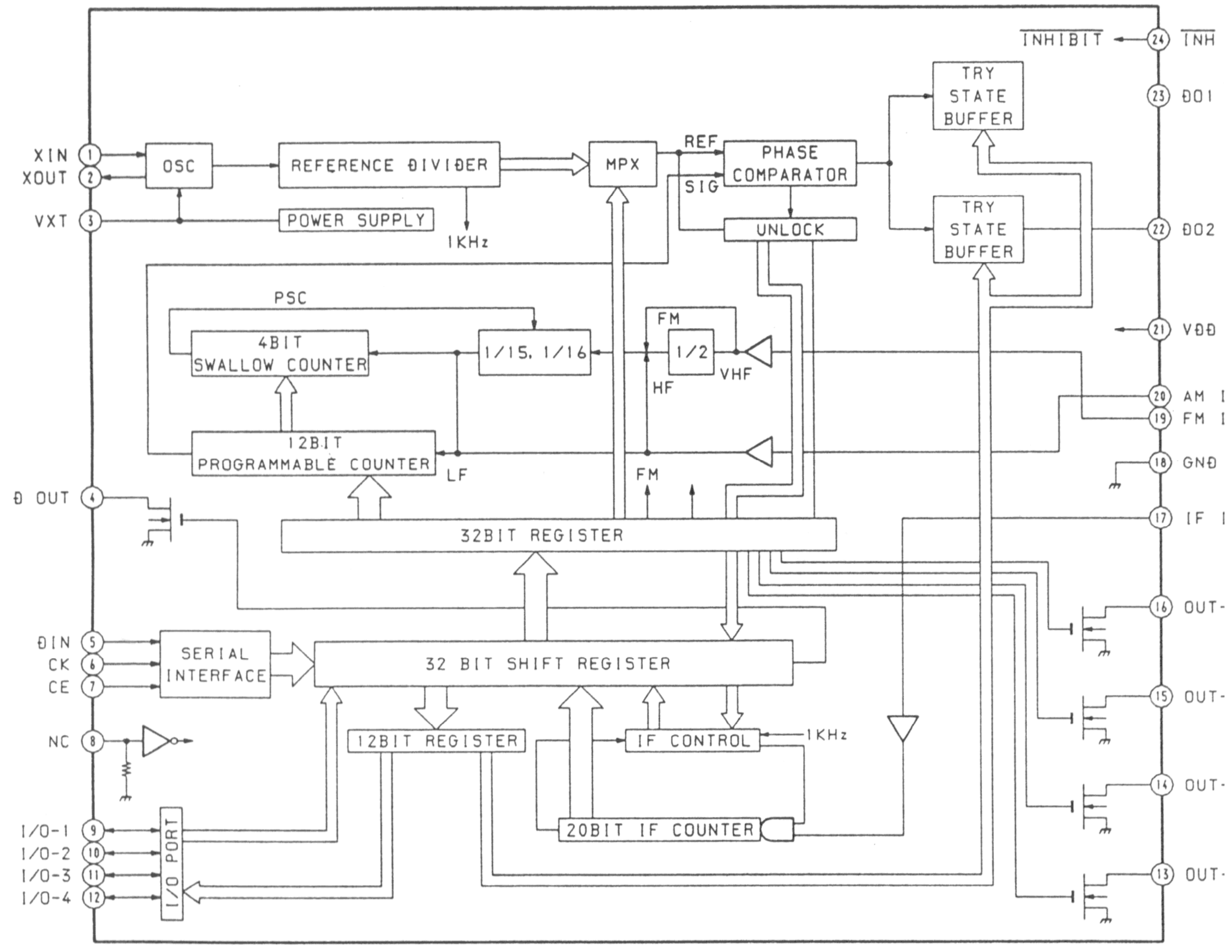
IC1 TA7371AF-EL


RF IN 1
GND 2
OFC DIODE (C) 3
AFC DIODE (A) 4
RF
REG
MIX
OSC
8 RF OUT
7 VCC
6 MIX OUT
5 OSC

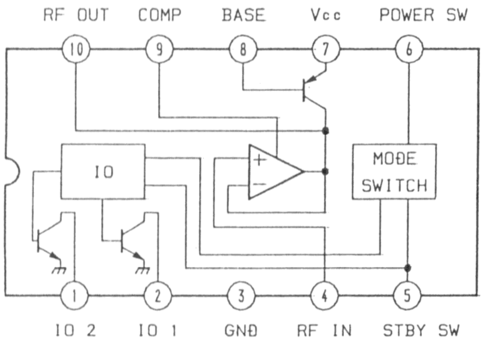
IC2 TA-2022AFN-EL


VREF 1
OSC 2
FM IF IN 3
MIX 4
VCC 5
AM IF IN 6
QUAD 7
AGC 8
GND 9
IF OUT 10
IF REQ 11
SP OUT 12
OSC
FM IF
MIX
AM IF
FM DET
AF
AM DET
AGC
STOP PULSE
SWITCH
AM
PILOT
FM
PRE
∠0°
VCO
DIVIDE
DECODE
∠90°
ST IND
AM IF
24
23
22
21
20
19
18
17
16
15
14
13

IC3 TC9418FN-EL


INHIBIT
INH
TRY STATE BUFFER
DO1
XIN
XOUT
VXT
OSC
REFERENCE DIVIDER
POWER SUPPLY
1KHz
MPX
REF
SIG
PHASE COMPARATOR
UNLOCK
TRY STATE BUFFER
DO2
PSC
4BIT SWALLOW COUNTER
1/15, 1/16
FM
1/2
VHF
HF
VDD
AM I
FM I
12BIT PROGRAMMABLE COUNTER
LF
FM
GND
D OUT
32BIT REGISTER
IF I
OUT-
DIN
CK
CE
SERIAL INTERFACE
32 BIT SHIFT REGISTER
OUT-
NC
12BIT REGISTER
IF CONTROL
1KHz
OUT-
I/O-1
I/O-2
I/O-3
I/O-4
I/O PORT
20BIT IF COUNTER
OUT-
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24

IC5 TA2015FN

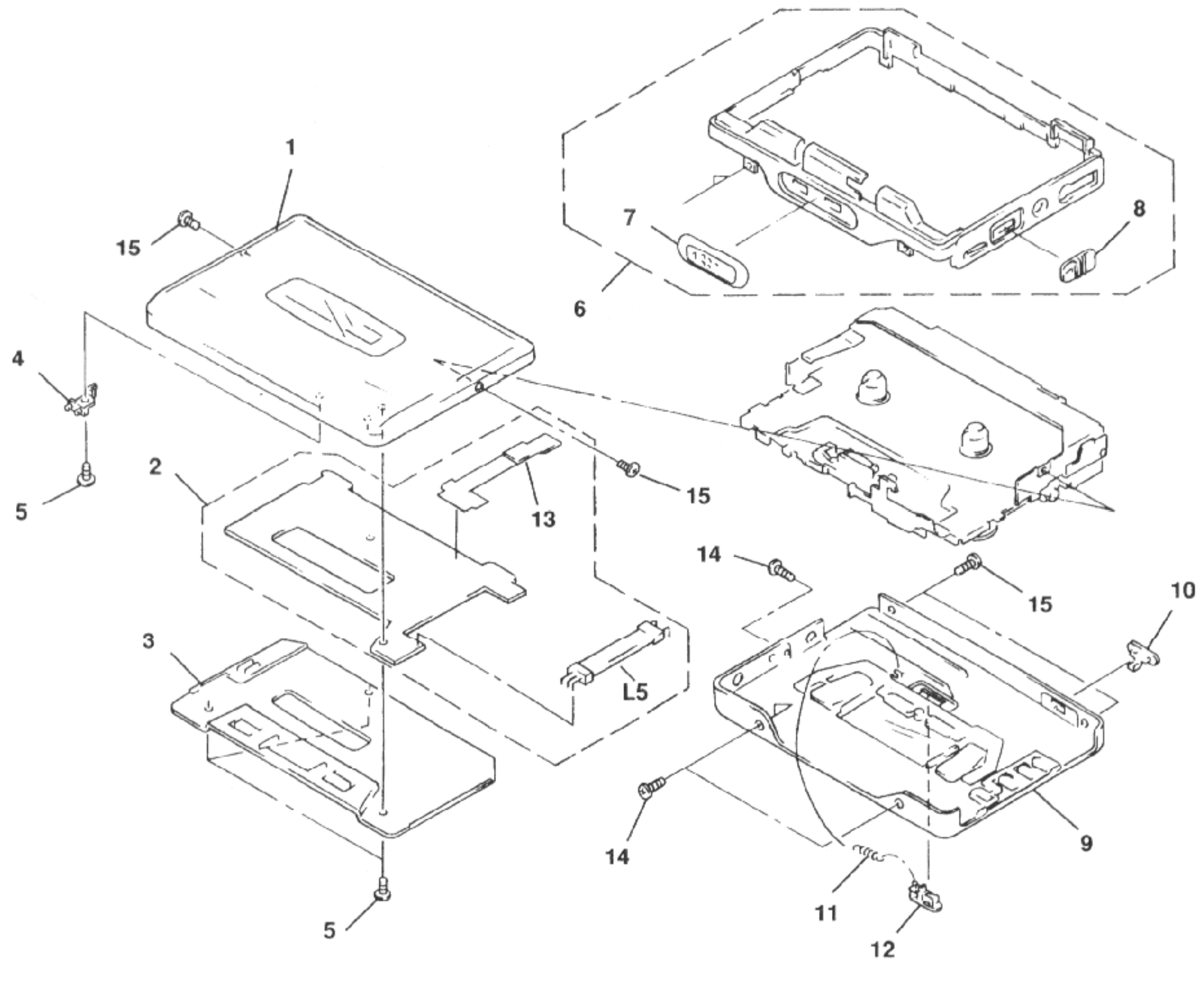

RF OUT
COMP
BASE
Vcc
POWER SW
10
9
8
7
6
IO
MODE SWITCH
+
−
1
2
3
4
5
IO 2
IO 1
GND
RF IN
STBY SW

SECTION 7
EXPLODED VIEWS

NOTE:
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.
- Abbreviation

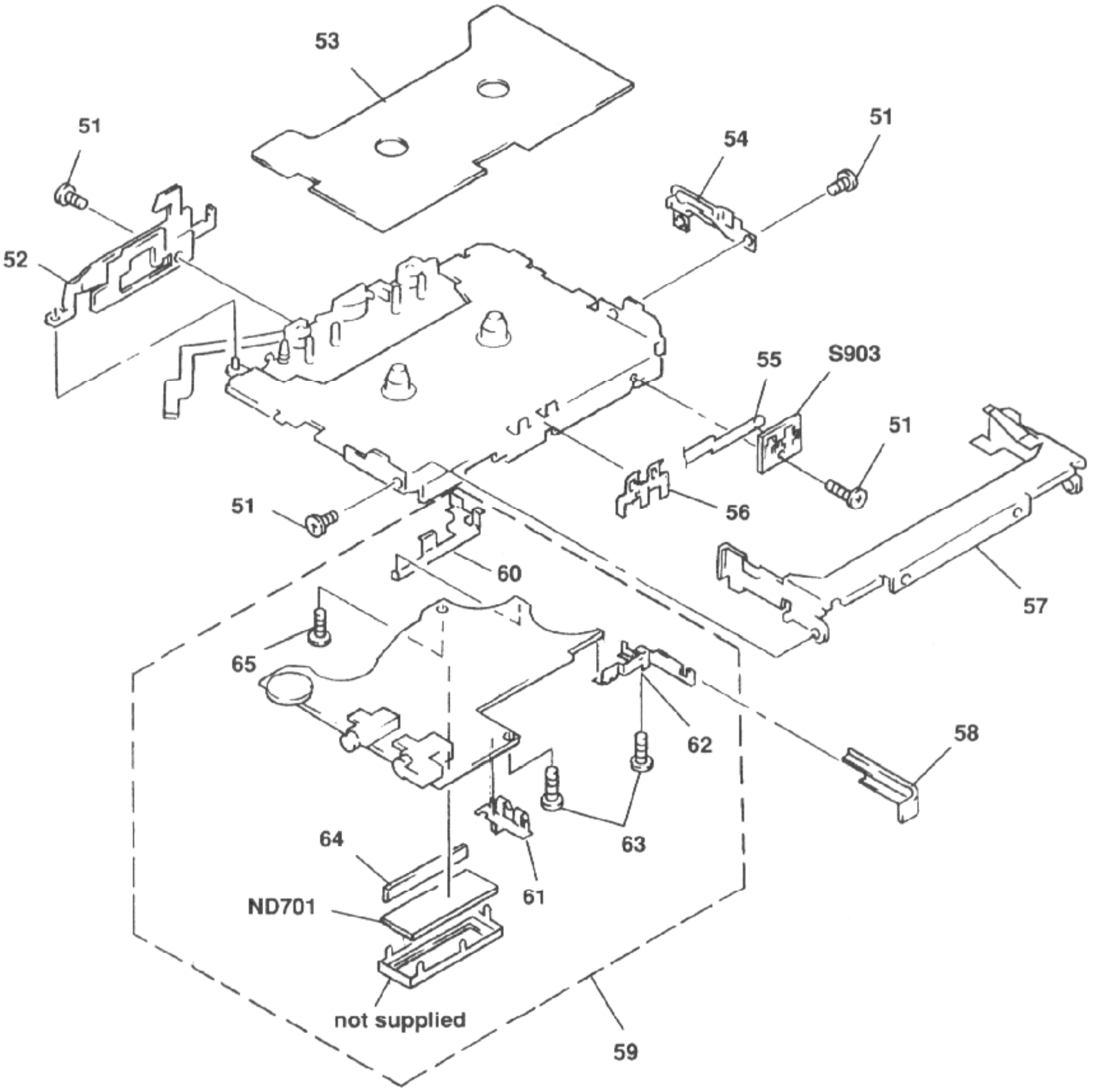
IT :Italian model
EA :Saudi Arabia model
AUS :Australian model
KR :Korean model

7-1. CASE SECTION



REF. No.	Part No.	Description	Remark
1	X-3371-291-1	LID (GX-Z) ASSY, CASSETTE (GX614)	
1	X-3371-293-1	LID (GX-B) ASSY, CASSETTE (GX612)	
2	A-3016-756-A	TUNER BOARD, COMPLETE	
3	3-930-797-01	COVER (TU)	
4	3-930-798-01	LOCKER, OPEN	
5	3-318-382-61	SCREW (1.7X2.5), TAPPING	
6	X-3371-290-1	ORNAMENT (GX-7) ASSY, REEL	
7	3-929-573-01	KNOB (OPEN)	
8	3-930-794-01	KNOB (HOLD)	
9	X-3371-292-1	CASE (GX-Z) ASSY (GX614)	
9	X-3371-294-1	CASE (GX-B) ASSY (GX612)	
10	3-930-804-01	KNOB (ISS)(GX612)	
10	3-930-804-11	KNOB (ISS)(GX614)	
11	3-930-806-01	SPRING, TENSION	
12	3-930-803-01	KNOB (REC)	
13	1-658-565-11	TU FLEXIBLE BOARD	
14	3-704-197-33	SCREW (M1.4X3.0)	
15	3-704-197-13	SCREW (M1.4X2.0)	
L5	1-501-812-11	ANTENNA, FERRITE-ROD	

7-2. MAIN BOARD SECTION

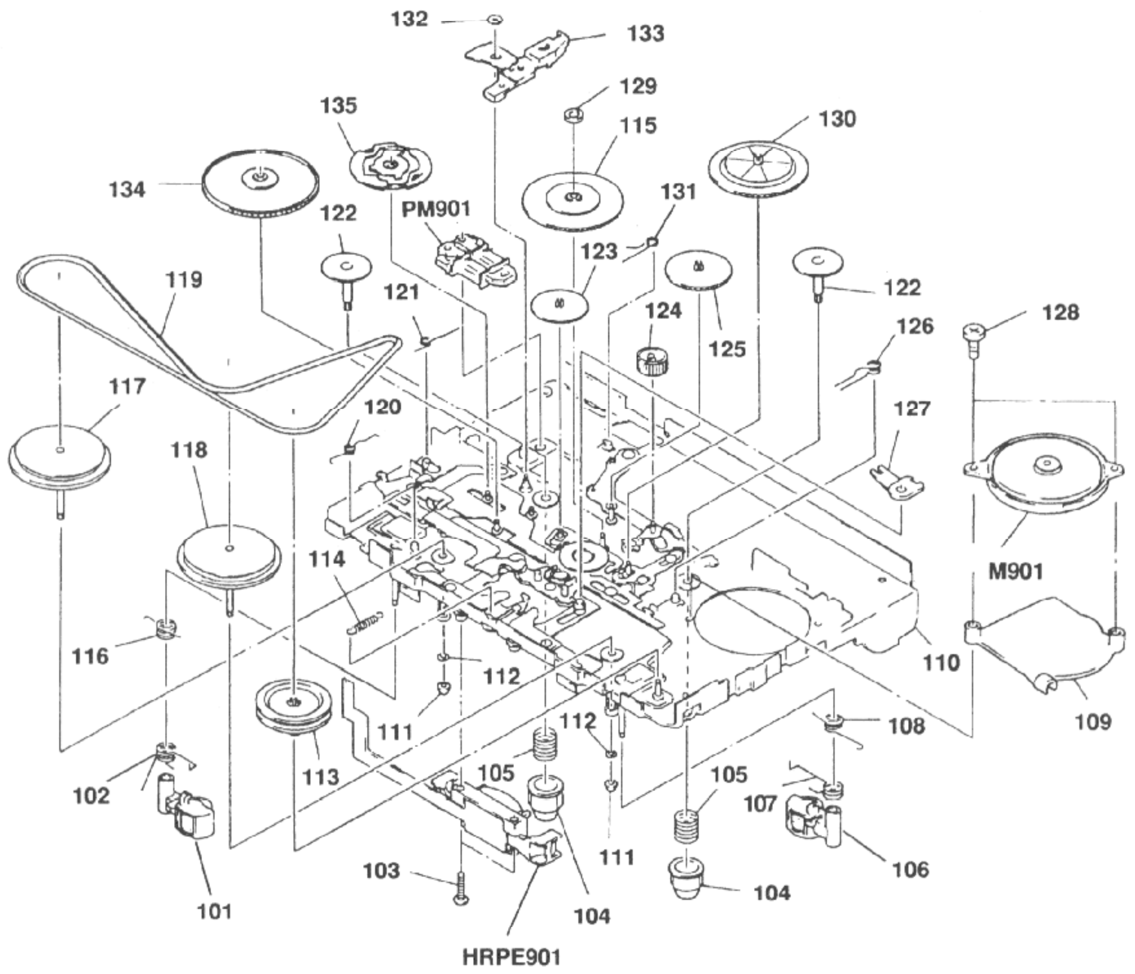


REF. No.	Part No.	Description	Remark
51	3-366-892-01	SCREW (M1.4)	
52	X-3370-961-1	BRACKET ASSY	
53	3-928-466-01	COVER, MD (GX614)	
53	3-928-466-11	COVER, MD (GX612)	
54	3-928-464-01	LEVER (B), LOCK	
55	1-658-564-11	ATS FLEXIBLE BOARD	
56	3-928-465-01	DETENT, CASSETTE	
57	X-3370-960-1	HOLDER ASSY, CASSETTE	
58	3-929-578-01	LID (N), BATTERY CASE (GX612)	
58	3-929-578-11	LID (N), BATTERY CASE (GX614)	
59	A-3016-751-A	MAIN BOARD, COMPLET (GX614)	
59	A-3016-752-A	MAIN BOARD, COMPLET (GX612)	
60	3-928-934-01	TERMINAL BOARD (MINUS),BATTERY	
61	3-929-575-01	TERMINAL BOARD, BATTERY	
62	X-3371-118-1	TERMINAL BOARD ASSY, BATTERY	
63	3-355-424-01	SCREW, TAPPING	
* 64	1-537-981-11	CONDUCTIVE BOARD, CONNECTION	
65	3-704-197-11	SCREW (M1.4X2.0)	
ND701	1-801-055-11	DISPLAY PANEL, LIQUID CRYSTAL	
S903	1-762-080-11	SWITCH, LEAF (ATS SW)	

7-3.

REF. No.	
101	)
102	3
103	3
104	3
105	3
106	X
107	3-
108	3-
109	3-
110	X-
111	3-
112	3-
113	3-
114	3-
115	X-
116	3-9
117	X-3
118	X-3
119	3-9
120	3-9

7-3. MECHANISM SECTION (MF-WMGX614-112)


132
133
129
135
115
130
134
122
PM901
131
123
119
121
122
124
128
126
125
117
120
127
118
114
M901
116
110
112
109
111
112
108
113
105
105
107
102
111
106
103
104
101
104
HRPE901

REF. No.	Part No.	Description	Remark
101	X-3368-776-1	PINCH LEVER (N) ASSY	
102	3-916-341-01	SPRING (PINCH N)	
103	3-704-413-31	SCREW (M1.4X7.2)	
104	3-916-357-01	GEAR (REEL)	
105	3-366-058-01	SPRING, COMPRESSION	
106	X-3368-777-1	PINCH LEVER (R) ASSY	
107	3-916-342-01	SPRING (PINCH R)	
108	3-916-344-01	SPRING (RETURN R)	
109	3-928-445-01	DECK, FIXED, TERMINAL	
110	X-3370-948-1	CHASSIS ASSY	
111	3-366-017-11	BUSHING (CAPSTAN)	
112	3-918-943-01	WASHER, STOPPER	
113	3-916-350-01	PULLEY (REVERSE)	
114	3-916-346-01	SPRING, TENSION	
115	X-3370-951-1	CLUTCH ASSY	
116	3-928-441-01	SPRING (RETURN N)	
117	X-3368-779-1	WHEEL (N) ASSY, CAPSTAN	
118	X-3368-778-1	WHEEL (R) ASSY, CAPSTAN	
119	3-928-444-01	BELT	
120	3-928-442-01	SPRING (LOCK LEVER)	
121	3-928-443-01	SPRING (R)	
122	3-365-801-01	TABLE, REEL	
123	3-916-353-01	GEAR (A)	
124	3-916-352-01	GEAR (FR)	
125	3-916-354-01	GEAR (B)	
126	3-916-347-01	SPRING (NR), TORSION	
127	3-916-339-01	LEVER (NRSW)	
128	3-358-455-11	SCREW, PRECISION WASHER HEAD	
129	3-338-645-31	WASHER (0.8-2.5)	
130	A-3042-517-A	GEAR (C) BLOCK ASSY	
131	3-916-348-01	SPRING (TRIGGER), TORSION	
132	3-348-953-31	WASHER	
133	3-916-338-01	LEVER (TRIGGER)	
134	3-928-439-01	GEAR (K)	
135	3-928-440-01	GEAR (CAM)	
HRPE901	1-500-279-11	HEAD, MAGNETIC (REC/PB/ERASE)	
M901	1-698-633-11	MOTOR (REEL/CAPSTAN)	
PM901	1-454-674-31	SOLENOID, PLUNGER	

ATS FLEXIBLE

MAIN

SECTION 8

ELECTRICAL PARTS LIST

NOTE:

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- RESISTORS
  All resistors are in ohms
  METAL: Metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F : nonflammable
- SEMICONDUCTORS
  In each case, u: μ , for example:
  uA...: μ A..., uPA...: μ PA..., uPB...: μ PB..., uPC...: μ PC..., uPD...: μ PD...
- CAPACITORS
  uF : μ F
- COILS
  uH : μ H
- Abbreviation
  IT :Italian model
  EA :Saudi Arabia model
  AUS :Australian model
  KR :Korean model

REF. No.	Part No.	Description			Remark
	1-658-564-11	ATS FLEXIBLE BOARD			
		********************			
		< SWITCH >			
S903	1-762-080-11	SWITCH LEAF (ATS SW)			
***					
	A-3016-751-A	MAIN BOARD, COMPLETE (GX614)			
		******************************			
	A-3016-752-A	MAIN BOARD, COMPLETE (GX612)			
		******************************			
*	1-537-981-11	CONDUCTIVE BOARD,CONNECTION			
		< CAPACITOR >			
C101	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C102	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C103	1-135-316-11	TANTAL. CHIP	22uF	20%	2.5V
C104	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C105	1-109-996-11	CERAMIC CHIP	1uF	6.3V	
C106	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C107	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C108	1-164-156-11	CERAMIC CHIP	0.1uF	25V	
C109	1-113-619-11	CERAMIC CHIP	0.47uF	10V	
C110	1-113-619-11	CERAMIC CHIP	0.47uF	10V	
C111	1-164-156-11	CERAMIC CHIP	0.1uF	25V	
C201	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C202	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C203	1-135-316-11	TANTAL. CHIP	22uF	20%	2.5V
C204	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C205	1-109-996-11	CERAMIC CHIP	1uF	6.3V	
C206	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C207	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C208	1-164-156-11	CERAMIC CHIP	0.1uF	25V	
C209	1-113-619-11	CERAMIC CHIP	0.47uF	10V	
C210	1-113-619-11	CERAMIC CHIP	0.47uF	10V	
C211	1-164-156-11	CERAMIC CHIP	0.1uF	25V	
C301	1-107-520-11	TANTAL. CHIP	33uF	20%	2.5V
C302	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C303	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C305	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C306	1-109-996-11	CERAMIC CHIP	1uF	6.3V	
C307	1-164-156-11	CERAMIC CHIP	0.1uF	25V	
C308	1-162-960-11	CERAMIC CHIP	220PF	10%	50V
C309	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C310	1-109-996-11	CERAMIC CHIP	1uF	6.3V	
C311	1-135-221-11	TANTAL. CHIP	3.3uF	20%	4V
C312	1-164-156-11	CERAMIC CHIP	0.1uF	25V	
C313	1-109-996-11	CERAMIC CHIP	1uF	6.3V	
C316	1-113-619-11	CERAMIC CHIP	0.47uF	10V	
C321	1-109-996-11	CERAMIC CHIP	1uF	6.3V	
C501	1-135-250-11	TANTAL. CHIP	4.7uF	20%	4V
C502	1-135-316-11	TANTAL. CHIP	22uF	20%	2.5V
C505	1-135-201-11	TANTAL. CHIP	10uF	20%	4V
C507	1-164-156-11	CERAMIC CHIP	0.1uF	25V	
C508	1-164-156-11	CERAMIC CHIP	0.1uF	25V	
C509	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C510	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C513	1-165-128-11	CERAMIC CHIP	0.22uF	16V	
C514	1-165-128-11	CERAMIC CHIP	0.22uF	16V	
C515	1-109-996-11	CERAMIC CHIP	1uF	6.3V	
C516	1-109-996-11	CERAMIC CHIP	1uF	6.3V	
C517	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
C518	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
C519	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C520	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C521	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C522	1-164-172-11	CERAMIC CHIP	0.0056uF	10%	25V
C524	1-164-695-11	CERAMIC CHIP	0.0022uF	5%	50V
C525	1-162-958-11	CERAMIC CHIP	270PF	5%	50V
C526	1-164-315-11	CERAMIC CHIP	470PF	5%	50V
C527	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C601	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C602	1-109-996-11	CERAMIC CHIP	1uF	6.3V	
C603	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C604	1-164-156-11	CERAMIC CHIP	0.1uF	25V	
C605	1-164-156-11	CERAMIC CHIP	0.1uF	25V	
C606	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C607	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C608	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C701	1-135-180-21	TANTALUM CHIP	3.3uF	20%	6.3V
C702	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C703	1-162-917-11	CERAMIC CHIP	15PF	5%	50V
C704	1-113-619-11	CERAMIC CHIP	0.47uF	10V	
C705	1-113-619-11	CERAMIC CHIP	0.47uF	10V	
C706	1-113-619-11	CERAMIC CHIP	0.47uF	10V	
C709	1-164-156-11	CERAMIC CHIP	0.1uF	25V	
C710	1-164-156-11	CERAMIC CHIP	0.1uF	25V	
C711	1-164-156-11	CERAMIC CHIP	0.1uF	25V	
C712	1-164-156-11	CERAMIC CHIP	0.1uF	25V	

REF. No.	Part No.	Description	Remark
C713	1-164-156-11	CERAMIC CHIP 0.1uF 25V	
C714	1-164-156-11	CERAMIC CHIP 0.1uF 25V	
C715	1-104-847-11	TANTAL. CHIP 22uF 20%	4V
C716	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
		< CONNECTOR >	
CN301	1-766-619-21	CONNECTOR, FFC/FPC 8P	
CN701	1-573-354-11	CONNECTOR, FFC/FPC 14P	
		< DIODE >	
D701	8-719-404-46	DIODE MA110	
D702	8-719-049-09	DIODE 1SS367-T3SONY	
D703	8-719-051-01	DIODE CL-170HR-CD-T (BATT)	
		< FERRITE BEAD >	
FB701	1-414-235-11	INDUCTOR, FERRITE BEAD	
FB702	1-414-235-11	INDUCTOR, FERRITE BEAD	
FB704	1-414-385-11	BEAD, FERRITE (CHIP)	
FB705	1-414-385-11	BEAD, FERRITE (CHIP)	
FB706	1-414-385-11	BEAD, FERRITE (CHIP)	
FB707	1-414-385-11	BEAD, FERRITE (CHIP)	
		< IC >	
IC301	8-759-368-55	IC BA3612AKV	
IC302	8-759-275-48	IC NJM2185V-TE2	
IC501	8-759-360-59	IC BA3641FV-E2	
IC601	8-759-356-46	IC MM1279XVBE	
IC701	8-759-360-57	IC MSM63120B-T10	
IC702	8-759-360-58	IC SMC62L3A-T10	
IC704	8-759-280-85	IC PST9010NL	
		< JACK >	
J302	1-766-512-21	JACK 7P (∩ REMOTE)	
J501	1-766-907-41	JACK 3P (MIC) (PLUG IN POWER)	
		< JUMPER RESISTOR >	
JC701	1-216-296-91	CONDUCTOR, CHIP (3216)	
		< COIL >	
L301	1-412-148-11	INDUCTOR CHIP 56uH	
L501	1-412-006-31	INDUCTOR CHIP 10uH	
L701	1-410-997-21	INDUCTOR CHIP 2.2uH	
		< LIQUID CRYSTAL >	
ND701	1-801-055-11	DISPLAY PANEL, LIQUID CRYSTAL	
		< PHOTO INTERUPTER >	
PH701	8-719-988-15	PHTO REFLECTOR PR-11-C	

REF. No.	Part No.	Description	Remark
		< TRANSISTOR >	
Q301	8-729-230-72	TRANSISTOR 2SA1362YG	
Q302	8-729-421-29	TRANSISTOR UN5216R	
Q303	8-729-421-77	TRANSISTOR UN5210-R-TX	
Q304	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q501	8-729-403-17	TRANSISTOR XN1215	
Q502	8-729-230-72	TRANSISTOR 2SA1362YG	
Q503	8-729-400-55	TRANSISTOR 2SD1328-S	
Q504	8-729-423-75	TRANSISTOR XN1116	
Q505	8-729-421-77	TRANSISTOR UN5210-R-TX	
Q506	8-729-421-77	TRANSISTOR UN5210-R-TX	
Q507	8-729-400-55	TRANSISTOR 2SD1328-S	
Q508	8-729-422-41	TRANSISTOR XN1114	
Q509	8-729-400-55	TRANSISTOR 2SD1328-S	
Q510	8-729-400-55	TRANSISTOR 2SD1328-S	
Q511	8-729-402-16	TRANSISTOR XN4608	
Q701	8-729-230-72	TRANSISTOR 2SA1362YG	
Q702	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q703	8-729-420-53	TRANSISTOR UN5115	
Q704	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q706	8-729-421-29	TRANSISTOR UN5216R	
Q707	8-729-402-55	TRANSISTOR 2SB1218A-R	
		< RESISTOR >	
R101	1-216-827-11	METAL CHIP 3.3K 5% 1/16W	
R102	1-216-823-11	METAL CHIP 1.5K 5% 1/16W	
R103	1-218-446-11	METAL CHIP 1 5% 1/16W	
R104	1-216-834-11	METAL CHIP 12K 5% 1/16W	
R105	1-216-827-11	METAL CHIP 3.3K 5% 1/16W	
R106	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R107	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R201	1-216-827-11	METAL CHIP 3.3K 5% 1/16W	
R202	1-216-823-11	METAL CHIP 1.5K 5% 1/16W	
R203	1-218-446-11	METAL CHIP 1 5% 1/16W	
R204	1-216-834-11	METAL CHIP 12K 5% 1/16W	
R205	1-216-827-11	METAL CHIP 3.3K 5% 1/16W	
R206	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R207	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R301	1-218-884-11	METAL CHIP 36K 0.50% 1/16W	
R302	1-218-446-11	METAL CHIP 1 5% 1/16W	
R303	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R304	1-216-853-11	METAL CHIP 470K 5% 1/16W	
R308	1-216-849-11	METAL CHIP 220K 5% 1/16W	
R501	1-216-863-11	METAL GLAZE 3.3M 5% 1/16W	
R502	1-218-847-11	METAL CHIP 1K 0.50% 1/16W	
R503	1-218-847-11	METAL CHIP 1K 0.50% 1/16W	
R504	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R505	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R506	1-216-817-11	METAL CHIP 470 5% 1/16W	

REF. No.	Part No.	Description				Remark
R507	1-216-801-11	METAL CHIP	22	5%	1/16W	
R508	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R509	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R510	1-216-849-11	METAL CHIP	220K	5%	1/16W	
R511	1-216-789-11	METAL CHIP	2.2	5%	1/16W	
R512	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R513	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R514	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R516	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R517	1-216-840-11	METAL CHIP	39K	5%	1/16W	
R518	1-216-840-11	METAL CHIP	39K	5%	1/16W	
R519	1-216-831-11	METAL CHIP	6.8K	5%	1/16W	
R520	1-216-831-11	METAL CHIP	6.8K	5%	1/16W	
R521	1-216-849-11	METAL CHIP	220K	5%	1/16W	
R522	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R523	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R601	1-216-849-11	METAL CHIP	220K	5%	1/16W	
R602	1-216-849-11	METAL CHIP	220K	5%	1/16W	
R603	1-216-849-11	METAL CHIP	220K	5%	1/16W	
R604	1-216-813-11	METAL CHIP	220	5%	1/16W	
R607	1-216-826-11	METAL CHIP	2.7K	5%	1/16W	
R608	1-216-843-11	METAL CHIP	68K	5%	1/16W	
R609	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R701	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	
R702	1-216-851-11	METAL CHIP	330K	5%	1/16W	
R703	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R704	1-216-840-11	METAL CHIP	39K	5%	1/16W	
R705	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R706	1-216-855-11	METAL CHIP	680K	5%	1/16W	
R707	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R708	1-218-870-11	METAL CHIP	9.1K	0.50%	1/16W	
R709	1-218-870-11	METAL CHIP	9.1K	0.50%	1/16W	
R710	1-218-836-11	METAL GLAZE	360	0.50%	1/16W	
R711	1-218-836-11	METAL GLAZE	360	0.50%	1/16W	
R712	1-218-845-11	METAL CHIP	820	0.50%	1/16W	
R713	1-218-847-11	METAL CHIP	1K	0.50%	1/16W	
R714	1-218-849-11	METAL CHIP	1.2K	0.50%	1/16W	
R715	1-218-851-11	METAL CHIP	1.5K	0.50%	1/16W	
R716	1-218-859-11	METAL CHIP	3.3K	0.50%	1/16W	
R717	1-218-857-11	METAL CHIP	2.7K	0.50%	1/16W	
R718	1-216-849-11	METAL CHIP	220K	5%	1/16W	
R719	1-216-849-11	METAL CHIP	220K	5%	1/16W	
R720	1-216-849-11	METAL CHIP	220K	5%	1/16W	
R721	1-216-849-11	METAL CHIP	220K	5%	1/16W	
R722	1-218-851-11	METAL CHIP	1.5K	0.5%	1/16W	
R724	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R726	1-216-853-11	METAL CHIP	470K	5%	1/16W	
R727	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R728	1-216-834-11	METAL CHIP	12K	5%	1/16W	
R729	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R730	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R731	1-216-849-11	METAL CHIP	220K	5%	1/16W	
		< VARIABLE RESISTOR >				
RV301	1-223-965-11	RES, VAR, CARBON (VOLUME)				
RV601	1-223-274-11	RES, ADJ, CERMET 2.2K				
		< SWITCH >				
S501	1-692-605-11	SWITCH, SLIDE (ISS SW)				
S701	1-572-581-11	SWITCH, SLIDE (F/R SW)				
S702	1-762-498-21	SWITCH, PUSH (HOLDER SW)				
S703	1-692-453-11	SWITCH, KEY BOARD (RADIO OFF) (■)				
S704	1-692-453-11	SWITCH, KEY BOARD (◀▶)				
S705	1-692-453-11	SWITCH, KEY BOARD (FF) (PRESET +)				
S706	1-692-453-11	SWITCH, KEY BOARD (REW) (PRESET -)				
S707	1-692-453-11	SWITCH, KEY BOARD (BAND) (RADIO ON)				
S708	1-572-467-21	SWITCH, PUSH (1 KEY) (REC)				
S709	1-692-453-11	SWITCH, KEY BOARD (MENU)				
S710	1-692-453-11	SWITCH, KEY BOARD (SET)				
S711	1-692-453-11	SWITCH, KEY BOARD (TUNING +)				
S712	1-692-453-11	SWITCH, KEY BOARD (TUNING -)				
S713	1-692-453-11	SWITCH, KEY BOARD (ENTER)				
S714	1-572-922-11	SWITCH, SLIDE (← HOLD)				
		< TRANSFORMER >				
T501	1-429-374-21	TRANSFORMER, BIAS OSCILLATION				
		< THERMISTOR(POSITIVE) >				
THP601	1-810-794-11	THERMISTOR, POSITIVE				
		< VIBRATOR >				
X701	1-760-872-11	VIBRATOR, CRYSTAL (32.768KHZ)				

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REF. No.	Part No.	Description				Remark
	A-3016-756-A	TUNER BOARD, COMPLETE ************************				
	1-658-565-11	TU FLEXIBLE BOARD ******************				
		< CAPACITOR >				
C1	1-162-953-11	CERAMIC CHIP	100PF	5%	50V	
C2	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C3	1-162-941-11	CERAMIC CHIP	10PF	0.5PF	50V	
C4	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V	
C5	1-164-676-11	CERAMIC CHIP	2200PF	5%	16V	
C6	1-162-953-11	CERAMIC CHIP	100PF	5%	50V	
C7	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V	
C8	1-162-938-11	CERAMIC CHIP	7PF	0.5PF	50V	

REF. No.	Part No.	Description			Remark
C9	1-162-905-11	CERAMIC CHIP	1PF	0.25PF	50V
C10	1-135-316-11	TANTAL. CHIP	22uF	20%	2.5V
C11	1-162-905-11	CERAMIC CHIP	1PF	0.25PF	50V
C12	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C13	1-164-676-11	CERAMIC CHIP	2200PF	5%	16V
C14	1-162-926-11	CERAMIC CHIP	82PF	5%	50V
C15	1-162-926-11	CERAMIC CHIP	82PF	5%	50V
C16	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C17	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C18	1-162-949-11	CERAMIC CHIP	47PF	5%	50V
C19	1-162-935-11	CERAMIC CHIP	4PF	0.25PF	50V
C20	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C21	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C22	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C23	1-164-315-11	CERAMIC CHIP	470PF	5%	50V
C24	1-162-918-11	CERAMIC CHIP	18PF	5%	50V
C25	1-162-949-11	CERAMIC CHIP	47PF	5%	50V
C26	1-107-493-11	TANTAL. CHIP	47uF	20%	2.5V
C27	1-164-362-11	CERAMIC CHIP	470PF	5%	50V
C28	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C29	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C30	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C31	1-164-346-11	CERAMIC CHIP	1uF	16V	
C32	1-164-346-11	CERAMIC CHIP	1uF	16V	
C33	1-162-961-11	CERAMIC CHIP	330PF	10%	50V
C34	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C35	1-163-139-00	CERAMIC CHIP	820PF	5%	50V
C36	1-164-345-11	CERAMIC CHIP	0.082uF	10%	25V
C37	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C38	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C39	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C40	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C41	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C42	1-164-676-11	CERAMIC CHIP	2200PF	5%	16V
C43	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C44	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C45	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C46	1-164-346-11	CERAMIC CHIP	1uF	16V	
C47	1-164-346-11	CERAMIC CHIP	1uF	16V	
C48	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C49	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C50	1-162-917-11	CERAMIC CHIP	15PF	5%	50V
C51	1-162-917-11	CERAMIC CHIP	15PF	5%	50V
C52	1-164-005-11	CERAMIC CHIP	0.47uF	25V	
C53	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C54	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C55	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C56	1-110-501-11	CERAMIC CHIP	0.33uF	10%	16V
C57	1-135-091-91	TANTAL. CHIP	1uF	20%	16V
C58	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V

REF. No.	Part No.	Description			Remark
C59	1-165-128-11	CERAMIC CHIP	0.22uF	16V	
C60	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C61	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C62	1-164-346-11	CERAMIC CHIP	1uF	16V	
C63	1-135-180-21	TANTALUM CHIP	3.3uF	20%	6.3V
C64	1-164-346-11	CERAMIC CHIP	1uF	16V	
C65	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C66	1-164-346-11	CERAMIC CHIP	1uF	16V	
C67	1-135-151-21	TANTALUM CHIP	4.7uF	20%	4V
C68	1-164-346-11	CERAMIC CHIP	1uF	16V	
C69	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C70	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C71	1-135-151-21	TANTALUM CHIP	4.7uF	20%	4V
C72	1-107-493-11	TANTAL. CHIP	47uF	20%	2.5V
C73	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C74	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C75	1-135-180-21	TANTALUM CHIP	3.3uF	20%	6.3V
C76	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C77	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C79	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C80	1-162-936-11	CERAMIC CHIP	5PF	0.25PF	50V
C81	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C82	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
		< FILTER >			
CF1	1-579-974-11	FILTER, CERAMIC			
CF2	1-579-823-21	FILTER, CERAMIC			
CF3	1-567-248-11	FILTER, CERAMIC			
CF4	1-579-974-11	FILTER, CERAMIC			
		< TRIMMER >			
CT1	1-141-327-11	CAP, VAR, TRIMMER (CHIP TYPE)			
		< DIODE >			
D1	8-719-050-97	DIODE MA357(E)-(TX).SO			
D2	8-719-050-97	DIODE MA357(E)-(TX).SO			
D3	8-719-055-61	DIODE HVR100-9TRU			
D4	8-719-055-61	DIODE HVR100-9TRU			
D5	8-719-420-87	DIODE MA8130			
D6	8-719-404-46	DIODE MA110			
D7	8-719-420-51	DIODE MA729			
		< IC >			
IC1	8-759-362-23	IC TA7371AF-EL			
IC2	8-759-362-25	IC TA-2022AFN-EL			
IC3	8-759-362-24	IC TC9418FN-EL			
IC4	8-759-350-86	IC S-29L194ADFE-TB			
IC5	8-759-186-88	IC TA2015FN-EL			

TUNER

REF. No.	Part No.	Description				Remark
		< JUMPER RESISTOR >				
JC1	1-216-295-91	CONDUCTOR, CHIP (2012)				
JC2	1-216-864-11	METAL CHIP	0	5%	1/16W	
JC3	1-216-864-11	METAL CHIP	0	5%	1/16W	
JC4	1-216-864-11	METAL CHIP	0	5%	1/16W	
		< COIL >				
L3	1-409-837-11	COIL (WITH CORE) (IF)				
L4	1-412-010-41	INDUCTOR CHIP		22uH		
L5	1-501-812-11	ANTENNA, FERRITE-ROD				
L7	1-410-213-51	INDUCTOR CHIP		56uH		
L8	1-412-032-11	INDUCTOR CHIP		100uH		
L9	1-412-029-11	INDUCTOR CHIP		10uH		
		< TRANSISTOR >				
Q1	8-729-425-73	TRANSISTOR	2SC4627-C			
Q2	8-729-425-73	TRANSISTOR	2SC4627-C			
Q3	8-729-823-86	TRANSISTOR	2SA1745			
Q4	8-729-425-73	TRANSISTOR	2SC4627-C			
Q5	8-729-425-73	TRANSISTOR	2SC4627-C			
Q6	8-729-429-32	TRANSISTOR	UN9210-QRS			
Q7	8-729-028-69	TRANSISTOR	2SC4655-BC(TX)			
Q8	8-729-028-69	TRANSISTOR	2SC4655-BC(TX)			
Q9	8-729-425-73	TRANSISTOR	2SC4627-C			
Q10	8-729-428-93	TRANSISTOR	UN9115-QRS-(TXE)			
Q11	8-729-429-32	TRANSISTOR	UN9210-QRS			
Q12	8-729-429-32	TRANSISTOR	UN9210-QRS			
Q13	8-729-429-32	TRANSISTOR	UN9210-QRS			
Q14	8-729-429-32	TRANSISTOR	UN9210-QRS			
Q15	8-729-428-93	TRANSISTOR	UN9115-QRS-(TXE)			
Q16	8-729-428-93	TRANSISTOR	UN9115-QRS-(TXE)			
Q17	8-729-429-32	TRANSISTOR	UN9210-QRS			
Q18	8-729-429-32	TRANSISTOR	UN9210-QRS			
Q19	8-729-428-93	TRANSISTOR	UN9115-QRS-(TXE)			
Q20	8-729-800-37	TRANSISTOR	2SD1048-X7			
Q21	8-729-420-68	TRANSISTOR	2SD1328-R-TX			
Q22	8-729-807-88	TRANSISTOR	2SB1295-UL7			
Q23	8-729-807-88	TRANSISTOR	2SB1295-UL7			
Q24	8-729-807-87	TRANSISTOR	2SB1295-UL6			
Q25	8-729-028-69	TRANSISTOR	2SC4655-BC(TX)			
Q26	8-729-428-93	TRANSISTOR	UN9115-QRS-(TXE)			
Q27	8-729-028-69	TRANSISTOR	2SC4655-BC(TX)			
Q28	8-729-428-93	TRANSISTOR	UN9115-QRS-(TXE)			
Q29	8-729-429-32	TRANSISTOR	UN9210-QRS			
Q30	8-729-028-69	TRANSISTOR	2SC4655-BC(TX)			
Q31	8-729-428-93	TRANSISTOR	UN9115-QRS			
		< RESISTOR >				
R1	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R2	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R3	1-216-853-11	METAL CHIP	470K	5%	1/16W	
R4	1-216-853-11	METAL CHIP	470K	5%	1/16W	
R5	1-216-818-11	METAL CHIP	560	5%	1/16W	
R6	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R7	1-216-853-11	METAL CHIP	470K	5%	1/16W	
R8	1-216-853-11	METAL CHIP	470K	5%	1/16W	
R9	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R10	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R11	1-216-849-11	METAL CHIP	220K	5%	1/16W	
R12	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R13	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R14	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R15	1-216-809-11	METAL CHIP	100	5%	1/16W	
R16	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R17	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R18	1-216-853-11	METAL CHIP	470K	5%	1/16W	
R19	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R20	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R21	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R22	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R23	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R24	1-216-831-11	METAL CHIP	6.8K	5%	1/16W	
R25	1-216-831-11	METAL CHIP	6.8K	5%	1/16W	
R26	1-216-831-11	METAL CHIP	6.8K	5%	1/16W	
R27	1-216-831-11	METAL CHIP	6.8K	5%	1/16W	
R28	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R29	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R30	1-216-853-11	METAL CHIP	470K	5%	1/16W	
R31	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R32	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R33	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R34	1-216-849-11	METAL CHIP	220K	5%	1/16W	
R35	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R36	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R37	1-216-849-11	METAL CHIP	220K	5%	1/16W	
R38	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R39	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R40	1-216-849-11	METAL CHIP	220K	5%	1/16W	
R41	1-216-853-11	METAL CHIP	470K	5%	1/16W	
R42	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R44	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R45	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R46	1-216-817-11	METAL CHIP	470	5%	1/16W	
R47	1-216-799-11	METAL CHIP	15	5%	1/16W	
R48	1-220-373-11	METAL GLAZE	620		1/16W	
R49	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R51	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R52	1-216-813-11	METAL CHIP	220	5%	1/16W	
R53	1-216-809-11	METAL CHIP	100	5%	1/16W	

REF. No.	Part No.	Description	Remark
R54	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R58	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R59	1-216-826-11	METAL CHIP 2.7K 5% 1/16W	
R60	1-216-849-11	METAL CHIP 220K 5% 1/16W	
R61	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R62	1-216-809-11	METAL CHIP 100 5% 1/16W	
R63	1-216-823-11	METAL CHIP 1.5K 5% 1/16W	
R64	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R65	1-216-820-11	METAL CHIP 820 5% 1/16W	
R66	1-216-815-11	METAL CHIP 330 5% 1/16W	
R67	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R68	1-216-815-11	METAL CHIP 330 5% 1/16W	
R69	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
		< VARIABLE RESISTOR >	
RV1	1-241-396-11	RES, ADJ, METAL GLAZE 22K	
		< TRANSFORMER >	
T1	1-406-404-11	COIL (MW OSCILATION)	
T2	1-411-603-21	COIL, AM MIX	
T3	1-423-745-11	TRANSFORMER, DC-DC CONVERTER	
		< VIBRATOR >	
X1	1-760-423-21	VIBRATOR, CRYSTAL (75KHz)	

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MISCELLANEOUS

REF. No.	Part No.	Description	Remark
13	1-658-565-11	TU FLEXIBLE BOARD	
55	1-658-564-11	ATS FLEXIBLE BOARD	
* 64	1-537-981-11	CONDUCTIVE BOARD, CONNECTION	
HRPE901	1-500-279-11	HEAD, MAGNETIC (REC/PB/ERASE)	
L5	1-501-812-11	ANTENNA, FERRITE-ROD	
M901	1-698-633-11	MOTOR (REEL/CAPSTAN)	
ND701	1-801-055-11	DISPLAY PANEL, LIQUID CRYSTAL	
PM901	1-454-674-31	SOLENOID, PLUNGER	
S903	1-762-080-11	SWITCH, LEAF (ATS SW)	

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ACCESSORIES & PACKING MATERIALS

REF. No.	Part No.	Description	Remark
	1-473-413-11	REMOTE CONTROL (RM-WM75G)(GX614)	
	1-504-652-12	HEADPHONE(WITH REMOTE CONTROL)(GX612)	
⚠	1-528-252-11	BATTERY CHARGER (BC-7S)(GX612:UK)	
⚠	1-528-434-11	BATTERY CHARGER (BC-7SG)(GX614:AUS)	
	1-528-543-11	BATTERY,NICKEL CADMIUM(NC-6WM) (GX612:E,EA,KR/GX614)	
	1-528-543-22	BATTERY,NICKEL CADMIUM(NC-6WM) (GX612:AEP,UK,IT)	
⚠	1-528-546-11	BATTERY CHARGER (BC-7SY) (GX612:AEP,IT,EA/GX614:EA)	
⚠	1-528-644-11	CHARGER, BATTERY (BC-7DT2)(E)	
⚠	1-528-661-11	BATTERY CHARGER (BC-7DR)(KR)	
	1-542-116-11	MICROPHONE	
⚠	1-569-007-11	ADAPTER, CONVERSION 2P (E)	
	1-759-043-11	BATTERY CASE	
	2-389-320-01	CUSHION, LOCK PLATE	
	3-810-273-11	MANUAL, INSTRUCTION (ENGLISH,SPANISH)(GX614)	
	3-810-273-21	MANUAL, INSTRUCTION (ENGLISH,FRENCH)(GX612:EA)	
	3-810-273-71	MANUAL, INSTRUCTION (CHINESE,ITALIAN,KOREAN)(GX614)	
	3-810-275-11	MANUAL, INSTRUCTION (ENGLISH,SPANISH) (GX612:E,KR/GX614:E,AUS,KR)	
	3-810-275-21	MANUAL, INSTRUCTION (ENGLISH,FRENCH) (GX612:AEP,UK,IT/GX614:EA)	
	3-810-275-31	MANUAL, INSTRUCTION (SPANISH,GERMAN) (GX612:AEP,UK,IT)	
	3-810-275-41	MANUAL, INSTRUCTION (DUTCH,SWEDISH) (GX612:AEP,UK,IT)	
	3-810-275-51	MANUAL, INSTRUCTION (ITALIAN,PORTUGUESE)(GX612:AEP,UK,IT)	
	3-810-275-61	MANUAL, INSTRUCTION (CHINESE,ITALIAN,KOREAN)(E,KR)	
	3-920-201-01	CLIP	
*	3-928-195-01	INDIVIDUAL CARTON (GX614)	
*	3-928-194-01	INDIVIDUAL CARTON (GX612)	
	3-931-774-01	CASE, CARRYING	
	8-953-537-90	HEADPHONE MDR-E741MP//K SET (GX614)	
	X-3336-715-1	STAND ASSY, MICROPHONE	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.